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THE MINIATURE EDITION OF THE ENGINEERING AND MINING JOURNAL

This beautiful edition of the JOURNAL will be made a "holiday" number, to appear on the 21st of December. The marked appreciation of our efforts to secure wider and better markets for American products, and to make known the resources and advantages this country presents, is very gratifying, and shows that our business men are moving forward with intelligence and the spirit to develop all the resources that are within their reach. The business of the country is improving, and energetic and far-seeing men are preparing to float in on the rising tide.

THE MISSISSIPPI CURRENT.

We publish this week a conclusive reply from General ABBOT to the attack made upon General HUMPHREYS and himself by Captain EADS. The aspect thus put upon the controversy justifies every thing that we have said so far, and leaves us under no necessity, we think, of saying more at present. Whether Captain EADS is able to learn from this communication any thing concerning mathematics and engineering or not, he may find out from it how to be "parliamentary and severe at the same time."

HEATING GAS BETTER AND CHEAPER THAN STEAM.

The system of steam heating for cities that is now working, through the usual "ring" channels, to get possession of the streets and public buildings of New York has not received the indorsement of any competent board of disinterested experts, and in the very nature of things can never be a cheap or desirable system for general adoption in domestic use. It is essentially a system for the rich, and if the streets of the city are torn up for the benefit of a comparatively small class, it can not be wondered at if the public should suppose there is a "job" in it.

Our steam-boilers utilize but a small percentage of the actual heating power of the coal, and the condensation and friction in long pipes will cause the loss of a very large part of the remainder, so large a part, indeed, that without such expensive precautions, in the shape of large pipes and non-conducting coatings, as would be the economic equivalent of a very large loss, it becomes impossible to carry steam advantageously to any great distance. At 212° (or a little over, depending on the pressure), the steam condenses, and is no longer available for heating purposes.

But above all are the facts that the great majority of persons use fuel for cooking and heating combined, and steam would be altogether unsuited for cooking; hence, fully nine tenths of the people would, with steam, be no better off than they now are.

What is needed, as a measure of absolute economy, convenience, and healthfulness, to the poor as well as the rich, is the distribution and use of heating gas. Almost the entire available heat capacity of the fuel can be delivered without loss and at a minimum of cost in the dwellings of the poor and rich, and gas-stoves, far more convenient, inexpensive, and wholesome than coal-stoves, can be used wherever coal is now burned, and the gas burned in them will make available at any desired temperature—for heating, cooking, or manufacturing purposes—the heat contained in the coal.

Heating gas is, beyond all comparison, more economical and useful than steam for the heating of cities, and we trust that our city authorities will have their respective merits investigated by competent experts before handing our streets over to any "ring" that may have a "job" in view.

The gas companies should seek in the heating-gas supply the profits they are losing and are going to lose in illuminating gas.

THE GEOLOGICAL HISTORY OF NEW YORK ISLAND AND HARBOR.

Under this title, Prof. J. S. NEWBERRY has published in the *Popular Science Monthly*, and the APPLETONS, we believe, have issued separately in pamphlet form, a monograph of extraordinary interest, the substance of which we shall briefly outline, heartily recommending to our readers, at the same time, the study of the original.

The first part of the essay is devoted to the paleozoic and mesozoic history of New York. The rocks composing the Island and underlying the neighborhood north and east (gneiss, mica-schist, dolomitic marble, serpentine) are regarded by Professor NEWBERRY as Laurentian, and as forming at one time a ridge which was part of a highland range that ran down on the eastern side of our continent, having the same general direction as the Alleghanies, but much older than the more recent folds of that chain—in fact, one of the oldest portions of the continent. On both sides of this ridge, Silurian, Devonian, and Carboniferous rocks have been deposited; and it seems therefore to have been a land-surface during those ages, and consequently to have been exposed to prolonged abrasion and reduction of altitude. During all these ages, this belt of highlands stood, to use Professor NEWBERRY'S forcible phrase, "as a witness of the varying phases of the unending war between land and sea, and saw the continent created and destroyed again and again; but in all these changes it took no part." This "unending war" involved alternating changes in the relative level of sea and land. Professor NEWBERRY speaks of them sometimes as risings of the ocean, sometimes as subsidences of the continent; and we can not clearly make out whether the difference in expression is intended to be significant. The ordinary view is, that these changes are all due to continental oscillations, and that the level of the sea has remained practically the same. Probably Professor NEWBERRY means nothing more than this, though doubtless two other causes at least have operated to affect (to a comparatively small degree, we should think) the absolute depth of the sea, namely, the unknown movements of the sea-bottom and the removal of water by various chemical processes (hydration of rocks, formation of fossil hydrocarbons, etc.).

"In the latter part of the Carboniferous age, the Alleghanies proper were gradually elevated, the convex folds forming mountain-ridges, the depressed or synclinal arches becoming the slowly-deepening coal-basins. In the end, all the country between the Atlantic and the Mississippi stood as a broad and elevated continental area. Subsequently the sea rose and fell upon its margin, leaving there the record of its oscillations in the deposits of the recent geological ages, but no considerable portion of its surface has since been submerged."

The Triassic period witnessed the deposit of shales and sandstones in the depressed area between the New York ridge and the Jersey Highlands, and a similar deposit in another trough, occupied by a lagoon or estuary, now the valley of the Connecticut. Passing over the events of this period, which Professor NEWBERRY describes with picturesque detail, yet without going beyond the legitimate deductions of science from the records of the rocks, we come to the great physical changes wrought at its close by the tilting of the Triassic beds, and the intrusion of mighty trap-sheets, often conformable to the sedimentary beds, and apparently members of the series, but really subsequent intercalations.

The erosion of the surface has since removed the softer sandstones and shales, leaving in high relief the outcrops of the trap, now known as the Palisades, the first and second Newark mountains, etc. Professor NEWBERRY does not think that the New Jersey and Connecticut basins were ever connected by continuous strata, but rather that currents in the two narrow troughs distributed the Triassic sediments in each, and that the lines of disturbance and eruption were also distinct.

In the Cretaceous age, the region about New York sank below its Triassic level, and the sea came in over a belt of country which had before been, and has now again become, dry land The Cretaceous sea-beach is still visible in the Raritan sands; the Amboy clays are the coast-deposits of decomposed and comminuted material from the highlands, while the marl-beds are marine deposits containing microscopic shells, the remains of animals, etc.

During the Eocene or early Tertiary epoch, the coast from New York southward was still low, and the sea washed the base of the Alleghany Mountains, covering the coast-plain, and depositing upon it the most recent of the marl-beds. But in the Miocene and Pleiocene epochs all the northern portion of the continent stood higher above the sea than now, as is shown by the absence of marine

deposits of that age along our coast, and by the immense numbers of fiords or submerged valleys. A genial climate, with a luxuriant flora and a varied fauna, prevailed to the Arctic Sea. Even in Greenland, the conditions were like those which now prevail in our Southern States.

Then came the terrible Glacial period, at the culmination of which the ice reached as far south as Staten Island and Trenton. The effect upon the topography of the country of this great, slowly-moving mass, in some places several thousand feet thick, was revolutionary. Its bearing upon New York was chiefly important in two particulars: the Hudson River and Long Island Sound. The basin of the great lakes was probably drained at one time by a mighty river, the second in size on the continent, which, leaving the basin of Lake Ontario at its southeast corner, traversed the now buried channel of the Mohawk, and entered the present valley of the Hudson near Albany. Through a much deeper and more precipitous valley than the present one, this ancient Hudson flowed southward, was joined at what is now the Battery by a large tributary from the East (the shrunken representative of which is the Housatonic, with perhaps the Connecticut), received through what is now Newark Bay another stream (the Passaic and Hackensack); passed through the Narrows, and, traversing a littoral plain, which may still be traced beneath the ocean-surface, emptied itself into the sea eighty miles southeast of New York.

The ice of the Glacial period blocked the drainage of the lakes, and turned it into the St. Lawrence. It crossed the Hudson obliquely from N.N.W., paying no attention to "so slight an irregularity of surface," but probably filling the channel with Glacial gravels, etc., which the floods of the succeeding period partially removed again. It ground down the higher portions, even of the hard, crystalline rocks, to a considerable extent; but when it reached the soft Cretaceous and Tertiary strata, bordering the continent east of the New York highlands, it cut much deeper, piling up at its southern margin the great moraine which now covers to a considerable depth the rocky foundations of Long Island. Between this moraine and the crystalline rocks of the Connecticut coast, Long Island Sound occupies the Glacial excavation; and only the strait at Hell Gate remains of the narrower channel which once brought the Housatonic into the Hudson.

Since the Glacial period, a great continental elevation has taken place, north of New York; but none of the coast to the southward appears to have been raised. Indeed, the coasts of New Jersey and Long Island are now gradually sinking. The quiet and general subsidence of the Atlantic shore, after the deep valleys of erosion had been carved out, has brought the sea into the channels once occupied by fresh water. As Professor NEWBERRY says, the James, York, Potomac, Susquehanna, and Delaware, are, like the Hudson, half-drowned rivers. But in the case of New York, the littoral plain has been so completely submerged, and the great basin formed by the junction of three rivers so widely covered with water, as to make an almost unequaled harbor, accessible, roomy, and safe. And the remains of former fresh-water systems still furnish, in the East River, the Sound, the New Jersey waters, and the Hudson, convenient channels for an immense trade. Nay, even the ancient connection with the great Lake basin is not wholly lost; for through the pass by which it formerly gained the Hudson, the Erie Canal and the Central Railroad have been constructed.

Professor NEWBERRY closes his essay with a recapitulation of the natural causes, beginning far back in geological history, ages before the advent of man, which fixed in advance the commercial supremacy of New York, and will secure it, he thinks, for centuries to come, although he admits that misgovernment or other human abuses may for a time partly neutralize the advantages which nature has so lavishly bestowed. The whole story is as interesting as a romance, and constitutes one of the most fascinating chapters in dynamic geology to be found in the literature of that science.

NEW PUBLICATIONS.

UNITED STATES CENTENNIAL COMMISSION. *Reports and Awards.* Edited by FRANCIS A. WALKER, Chief of the Bureau of Awards. Philadelphia: J. B. Lippincott & Co. 1878.

Here are twenty-nine volumes, containing the reports and awards in thirty-six groups. Eight or nine of them are books of considerable size (200 to 500 pages); the rest are little more than catalogues of awards. The paper and the print are good; and the editing has been well done, as Prof. WALKER'S name might lead us to expect would be the case. But at the threshold of our examination, we are astounded by the discovery that there is not in a single one of these volumes, great or small, the faintest trace of either table of contents or index. There is absolutely no way of discovering what is in them but to turn over the leaves one by one; and we advise the student, having found a passage once, to beware lest he lose his place; for in that event he must begin again at the beginning. Who is to blame for this unpardonable defect, we can not imagine. Experienced publishers like the LIPPINCOTTS, an experienced editor like Prof. WALKER, and experienced contributors many, certainly ought to have remembered that such a compilation specially needs to be accompanied with the means of facilitating its consultation. We have heard that an index is to be issued hereafter; but we are not satisfied with this explanation. One index, in a separate volume, will not be enough. The Vienna reports, edited by Prof. THURSTON, furnished an example of such practical good sense and simple yet thorough system in this particular, that we are justified in complaining loudly of the appearance of a similar series in such sad contrast—cosmos, coolly relapsing into chaos!

Our wrath and sorrow on this subject are all the greater since, in several of these volumes, there are contributions of permanent value, from eminent foreign as well as American authorities. We shall notice a few, which have reference to the engineering and mining profession.

Group I. (Minerals, Mining, Metallurgy, etc.) is represented by the largest volume (485 pp., of which 82 pp. comprise the list of awards). It begins with a paper on the mineral hydrocarbons, by Prof. G. C. BROADHEAD (18 pp.), which furnishes a comprehensive general survey of the occurrence of these oils and gums. Following this is the report on Wrought-Iron and Steel, by Mr. A. L. HOLLEY, who, although confined chiefly to the discussion of the exhibits actually made at Philadelphia, manages to weave into that discussion numerous observations, suggestions, and conclusions, full of the wisdom of an expert. It occupies 32 pp., and is succeeded by the report of Prof. F. PRIME, Jr., on Anthracite and Bituminous Coals (56 pp.). It is evident that many of the authors of these reports have been much hampered by the small space permitted to them; and probably no one has felt this disadvantage more keenly than Prof. PRIME, who has, with infinite labor, compressed within the limits at his disposal a very large amount of useful information, particularly in the way of analyses. Prof. J. S. NEWBERRY furnishes the report (64 pp.) on Building and Ornamental Stones, in which the exhibits of different countries are first briefly characterized, and then more definitely described under the separate heads of Granites, Freestones (comprising sandstones and certain limestones), Marbles, Serpentines, Slate, Flagging Stones, and Minor Ornamental Stones. This report constitutes a valuable *catalogue raisonnée* of all the varieties of building stone (particularly marble) produced in this country or imported into it. We know of no text-book on economical geology which covers the ground so well. Four short reports by Prof. JAMES M. SAFFORD deal interestingly with Whetstones, Millstones, Grindstones, Emery, and Corundum. Señor DANIEL DE CORTAZAR, the Spanish member of the jury, is the author of the report on Mercury. It is very unsatisfactory, particularly in its meager description of the Spanish mines and methods. In splendid contrast stands the elaborate and beautiful paper of Oberbergrath E. F. ALTHANS, of Breslau, on the Mechanical Dressing of Ores and Coal. This is doubtless the most important and complete of all the treatises emanating from the juries of the Centennial Exhibition. We mention it but slightly in passing, since we design to notice more at length a somewhat enlarged German version of it, which has lately appeared. It occupies 131 pp., and is followed by a paper on Coal-Mining Machinery by M. ACHILLE JOTTRAND—too brief to amount to more than a description of three or four exhibits, without any attempt at a critical judgment. Messrs. SAFFORD, BROADHEAD, HARDEN, HALL, and others give accounts of the various geological and mineralogical collections exhibited; and the list of awards concludes the volume.

Group II. (Pottery, Glass, Artificial Stone, etc.) occupies a volume of 284 pp., containing a detailed report on pottery, porcelain, and glass, apparently by the whole jury, and special monographs on the Chemistry and Composition of the Porcelain and Porcelain Rocks of Japan, by Prof. HENRY WURTZ, and on Portland, Roman, and other Cements and Artificial Stone, Brick-Making Machinery, Brick-kilns, Perforated and Enameled Bricks and Pavements, by Gen. QUINCY A. GILLMORE. These are first-rate authorities; and their work is worthy of preservation and reference. We notice that Gen. GILLMORE'S comparison of wood, asphalt, and stone pavements strongly favors asphalt. His statement of the hygienic objections against wood acquires sad force from the recent experience of Southern cities with rotting pavements.

Group III. (Chemistry and Pharmacy, 283 pp.) contains an elaborate treatise on the Production of Sugar, by Prof. J. W. MALLETT, of the University of Virginia, a translated extract from a report by F. KUHLMANN, FILS, on the Chemical Arts, another essay by Prof. MALLETT, on The Finer Chemicals, including Coal-Tar Colors, and an excellent article on Petroleum, from the practiced hand of Dr. J. LAWRENCE SMITH.

Under Group XVIII. (Railway Plant, etc.), Capt. DOUGLAS GALTON, of the British Royal Engineers, furnishes an extract from his report to his own government, which makes us wish we had the whole. It contains much discriminating criticism of the peculiarities of American practice. Chief Engineer FELICIEN SLATAFOR, of the Pennsylvania Railroad, writes on chilled cast wheels, and gives some highly valuable data, particularly as to the famous Hamilton wheels, made at the Altoona shops from a mixture of steel and anthracite pig, and proved to be equal in every respect (except price) to charcoal wheel-iron of the best quality. On the

whole, though this volume is very small (82 pp.) in proportion to what might have been compiled on the subjects embraced in the group, what there is of it is very good indeed.

Group XX. (Motors, Hydraulic and Pneumatic Apparatus, etc.) is represented by an admirable general report from Mr. CHARLES E. EMERY, of New York; a brief extract from Mr. W. H. BARLOW'S report to the British Government, and three highly valuable reports of Committees of the group, giving the results of practical tests of the principal steam-boilers, fire-engines, and turbines exhibited. The Committee on Boilers has taken the pains to number the paragraphs of its report; but as there is no index, the pains are thrown away.

Let us be thankful that the pages of these volumes are numbered. It is at least possible for the student to make for himself memoranda or partial indexes, to guide him in consulting such reports as interest him specially. The account we have given proves that there is no lack here of matter which concerns the engineer, metallurgist, and chemist. In this respect, the experts who have made contributions, and Prof. WALKER, who has administered a thankless office with extraordinary executive ability, in spite of extraordinary obstacles, deserved to be thanked and congratulated. The reports labor under one great disadvantage as compared with those which have proceeded from American Commissioners at former international exhibitions. They are weighed down by the awards, which not only occupy, to no great good, a large part of the space available in the volumes, but have evidently worn out in monotonous routine-work, the zeal of most of the judges, leaving all the labor of impartial discussion to a zealous few. We believe that there has also been in this matter of reports and publications a great lack of money. Prof. WALKER and his coadjutors have had to make bricks without straw, and put them together without mortar. It can not be too much lamented that in the most important department of all, that which commemorates the Exhibition and perpetuates its benefits after it is past and gone, the efforts of its competent historians and critics should have been crippled in this way. Every group in the Exhibition ought to have been treated with the fullness and discrimination which have been bestowed on two or three only. The reports should have been the most worthy monument of our national progress produced by the Centennial celebration. That such might have been the case is shown by the excellence of a few of the volumes before us. That it is not the case, we are sure is no fault on the part of the Editor.

ALBUM TO THE COURSE OF LECTURES ON METALLURGY *at the Central School of Arts and Manufactures of Paris.* By S. JORDAN, C.E., *Professor of Metallurgy at the Central School of Arts and Manufactures of Paris, Past President of the French Society of Civil Engineers, Member of the Iron and Steel Institute, and of the American Institute of Mining Engineers. With One Hundred and Forty Plates, Description of the Plates, Numerical Data, and Notes upon the Working of the Furnaces and Machinery.* London (Trübner & Co.) and Paris (J. Baudry), 1878.

Professor JORDAN is widely known as one of the leading experts of the present day in the metallurgy of iron. The publication of his reports on this subject after the Paris Exposition of 1867 established his fame as author and critic, and his administration as managing director of large metallurgical works has contributed scarcely less to the esteem in which he is held.

The superb atlas before us, with its accompanying volume of descriptive and explanatory text, was issued three or four years ago in French. The present edition has an English text. The title-page accurately states its nature, except that it does not say, as in strictness it should do, that the metallurgy of iron only is embraced. Under that head, the atlas gives a very full survey of the apparatus of the art, which, besides being clear, has the great merit of being modern—as modern, at least, as 1874. The Ponsard, Pernot, Bicheroux, and Crampton furnaces, the Danks puddler and the Siemens apparatus for direct reduction are not given in the plates, though the text briefly mentions most of them. But the best European and English forms of modern plant in successful operation are figured and discussed. The subject is divided into four parts: I., Fuel; II., Production of Pig-Iron from the Ore; III., Manufacture of Malleable Iron; and IV., Manufacture of Steel. In Part I. two plates illustrate the manufacture of charcoal and the drying and torrefaction of wood and peat; and eleven are given to the various systems and apparatus for coke-making. In Part II. the forms and details of blast-furnaces occupy 14 plates; steam-boilers 3; blowing engines, 6; hot-air ovens, 8; and miscellaneous matters, 12. In Part III. we have 2 plates on Catalan forges, 4 on the manufacture of charcoal bar, 15 on refining, puddling, shingling, rolling of puddled bars, and shearing; 33 on heating, hammering, and rolling of merchant bars, rails, beams, etc.; 12 on the manufacture of sheets and plates, and 5 on the ground plans of iron-works. Part IV. comprises 7 plates on the Bessemer process, 4 on open-hearth, blister, and cast steel, and 2 on the welding and forging of steel. The plates cover each two pages of large quarto size, and are beautifully executed to metric scale. The text is so terse and clear that M. JORDAN'S introductory apology for his English style is quite unnecessary. We wish all native authors wrote as well.

PERSONALS.

WANTED—Antimony ore or regulus.

Our readers are invited to send us items for this column.

At Marmora, Ontario, are some of the richest gold veins in America. This is a field well worthy the attention of capitalists.

Who wants a real bonanza? See our San Juan special correspondence. Our correspondent is a well-informed and reliable authority.

We have frequent inquiries for coke made from washed coal. Manufacturers will do well to give their addresses in our advertising columns.

Leadville, Colo., has wonderfully rich mines with wonderfully bad titles. It is estimated that a large part, or, perhaps, in some cases, the whole, of their profits will go to the lawyers.

The Texas Pacific R.R. is actively at work—lobbying in Washington, and by so-called "extension of commerce" meetings in other places, trying to get a government subsidy for the work. The country is too poor to give away millions to make a few men rich.

MR. D. G. CROLY, late managing editor of the New York *Graphic*, and a member of the Executive Committee of the Bullion Club, is now in Colorado. Mr. C. has been quite successful in his mining stock speculations, and is a firm believer in the enormous benefit which is to come from making New York the great center for mining investments, as it already is for all other classes of financial transactions.

RIP VAN WINKLE has come down from the mountains. After four years of "combination" and high prices, which he helped to maintain, Mr. SAMUEL SLOAN, President of the Delaware, Lackawanna, and Western Railroad Company, has had an inspiration. He says, according to the *Evening Post*, "the combination is virtually at an end, and he is glad to have it out of the way. He never believed in combinations, and he hoped there would never be another. He thinks an increase of the price of coal and a limitation of the production would be an injury to manufacturing interests and to the country generally. It was better for the companies themselves, as well as for the consumers, to have a larger amount of tonnage at moderate prices." This is just what the ENGINEERING AND MINING JOURNAL has been saying for several years. We congratulate Mr. SLOAN on his late conversion—or, at least, we will congratulate him if he don't go into another combination.

Our correspondent "J. A. McN.," who wants to know about the "Seminole Gold and Silver Mining Company, of Rawlins, Wy. Ter.," might have seen the swindle exposed in these columns long ago. For his benefit we reproduce the following from the *Laramie Sentinel* of a few months ago:

"A SWINDLE.—We are frequently receiving letters asking for information about the SEMINOLE GOLD AND SILVER MINING COMPANY. We can't answer these letters—there are too many of them. But we will state in the most public manner possible, that the Seminole Gold and Silver Mining Company, J. R. Brown, President, with headquarters at Rawlins, W. T., IS A PURE FRAUD, SWINDLE, AND STEAL. J. M. Pattee, of lottery fame, is at the bottom of it. THERE IS NO MINE, NO MILL, NO MACHINERY THERE, and *never will be*, and every man who purchases stock in it is merely *contributing to a lot of dishonest Dead Beats*, who are making their living by *gulling the public*. If any one has any doubts on this score, we refer them to the *Governor*, the *Judges of the Supreme Court* of Wyoming, or any other responsible party."

With regard to the Tip Top mine, of which our correspondent asks, it is now quoted on the New York Mining Stock Board, and is dealt in to a small extent. The mine has never paid any dividends; has made assessments to the amount of $120,000, the last delinquent in August of this year. The quotations of this stock in San Francisco have varied during the past six months from 70c. to $2 a share. No such information concerning the property has been made public as would justify a prudent man in investing in its stock.

METALLURGICAL QUERIES.

(*Continued from page* 380.)

3. What is amalgamation? In other words, if an ounce of Au be put into a quart of Hg, what follows? In time, no trace of the solid metal can be found by touch (in the language of the alchemists, the Eagle has devoured the Sun). Yet it can nearly all be aggregated and recovered by expressing the Hg through buckskin, etc. Surely this is not a "solution" in the ordinary sense of that word. A lump of salt or sugar can not be recovered in a similar way. Why do fluid amalgams differ from other "solutions," and how; any way, how?

4. Is any full and satisfactory rationale of the cupellation process known? Can any reason be given why, in an alloy of Ag and Pb on the test, the atoms of Ag should segregate (flock by themselves) and decline to enter the porous inclosure along with the PbO; or, conversely, why the bone-ash or other material used should be permeable by the liquid oxide, and not by the reguline Ag?

[Will some of our readers please answer our correspondent?—ED. E. AND M. J.]

FATAL EXPLOSION IN A CHILIAN COAL MINE.—Chilian advices say that on the 9th inst. an explosion occurred in the Rosario coal mine at Lebu. Sixteen miners were killed and a large number wounded, only six escaping uninjured from the pit. The pecuniary loss, in damage to the mines, is estimated at $100,000.

IMPROVED TILE-MAKING MACHINE.

The following illustrations, which we take from the *Agricultural Gazette*, represent a new continuous-feed, brick, pipe, and tile-making machine of English construction. Machines of this pattern for solid bricks only have been in use for a considerable period; but in the present apparatus not only solid, but perforated, hollow, or tubular bricks, roofing tiles of all descriptions, paving bricks, and drain pipes up to 12 inches in diameter, may be made.

The clay is both ground and pugged in the upper part of the machine. Thence it passes to the lower horizontal cylinder, whence it is expressed around a core, if for tiles or other curved forms. The material then slides upon the table, on the surface of which are horizontal rollers, and passes (if in the form of solid bricks) between the vertical rollers shown. The tiles or bricks are separated by means of the wires placed in the movable frame shown.

Fig. 1 shows the arrangement of the machine for producing solid bricks, and Fig. 2 the construction for tile-making. The apparatus is self-contained, and can be put down anywhere in a very short time without skilled labor. It is mounted on wheels, so as to render it portable; and can be opened by simply removing a few bolts, so that the interior of the mill is readily accessible. The power required is stated to be 4 horse-power nominal, and the capability of the machine 15,000 bricks per day.

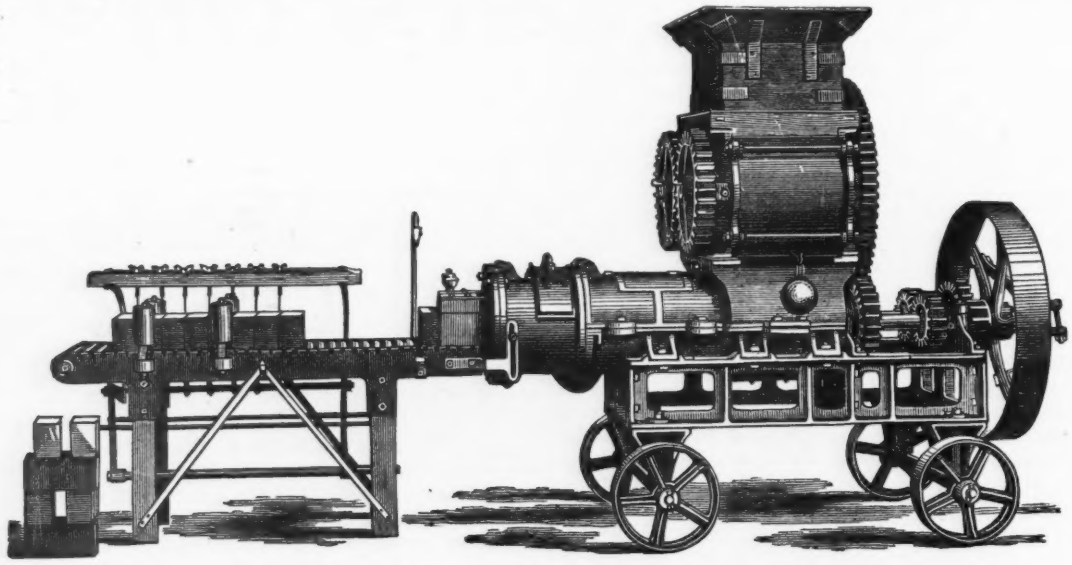

Fig. 1.

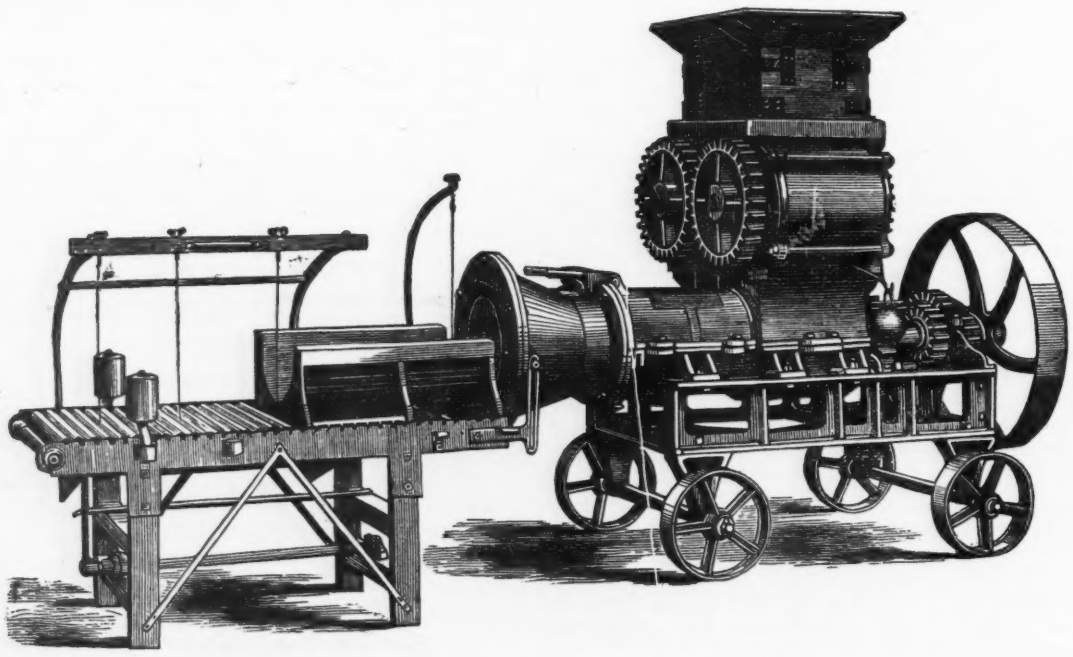

Fig. 2.—IMPROVED TILE-MAKING MACHINE.

M. Bouillard, a French savant, who lately pronounced the phonograph a ventriloquial fraud and the microphone an acoustical humbug, has probably had his doubts set at rest; for at the *séance* of October 7th, Count du Moncel again exhibited the "singing condenser" and the phonograph before the entire Academy, leaving it to the members to make the experiments themselves.

COMBINATION IN THE OHIO-KANAWHA SALT MANUFACTURING INTERESTS

The Cincinnati *Gazette* says: "For several years past, manufacturers of salt on the Kanawha and upper Ohio rivers have been operating their works at a positive loss—even sometimes at a loss of ten cents on every barrel. In consequence of this, some of the works have ceased to manufacture, and the number of persons thrown out of employment by the discontinuance is estimated roughly at 2000, many of whom have families dependent upon them. In addition to this, kindred interests are largely depressed in that region.

"Recently, all the salt companies have been organized into one, and it is believed that hereafter the manufacture can be continued at a profit. The new company is called 'The Ohio River and Kanawha Salt Company,' and is incorporated under the laws of Kentucky. The capital stock is $150,000, with the privilege of increase.

"The company has leased for three years all the apparatus and machinery, salt-houses, salt-sheds, railways, drums, etc.—but not the furnaces—of all the salt works on the Ohio and Kanawha rivers, with the exception of one or two, and for these negotiations are pending that will probably result in the whole business being under one management. The total number of works leased up to the present time is twenty-three. This action will be hailed with delight by the communities in which salt is manufactured, as it seems that it must insure both regularity and safety in the running of the works, and will prevent such total prostration of the business as now affects them."

An Observatory on Mount Etna.—The scheme for an observatory on the summit of Mount Etna is again pushed in the English scientific journals. The atmosphere there is peculiarly clear, and it is thought that some important results might be arrived at by a series of daily observations.

CORRESPONDENCE.

Rock Drills.

EDITOR OF THE ENGINEERING AND MINING JOURNAL:

SIR: In your last issue, descriptive of Sutro Tunnel, you have unintentionally done us injustice, by omitting to mention that the Ingersoll Drill superseded the Burleigh Rock Drill August 25th, 1876, on that work; 16 of ours doing the work of 22 Burleighs. Since then no other drill has been used but ours.

F. M. PIERCE,
Secretary Ingersoll Rock Drill Company.

NEW YORK, December 4, 1878.

THE MISSISSIPPI CURRENT.

EDITOR OF THE ENGINEERING AND MINING JOURNAL:

SIR: In the ENGINEERING AND MINING JOURNAL of October 26th, and in the September number of *Van Nostrand's Eclectic Engineering Magazine*, a Review of the Report upon the Physics and Hydraulics of the Mississippi, by Humphreys and Abbot, appeared over the signature of James B. Eads, C.E. He states at the outset that he desires to reach the general intelligent public rather than scientific readers. The Mississippi report was prepared for professional engineers, and as its conclusions will stand or fall by their verdict, I ask space in your journal to expose some of the errors of this popular review.

Captain Eads raises two principal issues with our report, each of which will be considered by itself.

RELATION BETWEEN CURRENT AND SUSPENDED EARTHY MATTER.

The first question at issue is, whether the water of the Mississippi always holds in suspension the maximum amount of earthy matter which water flowing with that precise velocity is able to support. If yea, then any diminution in this velocity must cause a deposit; and any increase may cause an excavation, provided the bed or banks are of such a nature as to supply suitable material. If nay, then no such results can be rationally predicated.

This question of fact—for theory has nothing to do with it—was conclusively decided in the negative by the long series of observations reported in the Physics and Hydraulics of the Mississippi. Captain Eads, with various adjectives which add nothing to his argument, denies the truth of this deduction, and asserts that it is based upon fallacies and blunders made by us in discussing our observations. The accuracy of the latter he does not dispute.

Our analysis of these observations, stated in brief, consisted in plotting two curves, of which the common abscissas were times; and the ordinates, respectively the mean velocity of the river in feet per second, and the corresponding number of grains of earthy matter held in suspension by one cubic foot, representing the average for the whole river. If the latter quantity were a function of the former, the forms of the two curves would exhibit a certain symmetry. This was not the case, the amount of sediment per cubic foot, when the river was flowing most rapidly, being often no more than at the lowest stage.

These curves happen to be very unlucky for Capt. Eads' professional projects; for they overturn the theory upon which he proposes to dispense with levees, to improve the navigation of the upper river, and, in one word, to control the appropriations which Congress may grant for the lower Mississippi. The world is not wide enough for them and him, and they must be removed from his path. Calling, therefore, upon the divinities of Dynamics, Force, Matter, Space, and Time to aid in raising a cloud of confusion over a very simple question of mathematics, he makes a desperate assault upon our method of reasoning. Not to follow him through several pages of this style of writing, which, although perhaps effective with the popular audience to which he appeals, will be passed over by professional men, let us examine his final conclusion. It is, that the ordinates of the sediment curve must be multiplied by the corresponding discharges of the river, before they can be compared with those of the mean velocity curve.

The absurdity of this proposition has been so clearly pointed out by Mr. R. E. McMath, C.E., in the *Engineering News* for February 28th, 1878, that it is needless to repeat the elaborate algebraic demonstration by which he arrived at the conclusion that "mathematically this step is a blunder which would disgrace a boy in the junior class of our High School."

Suffice it to say, that the quantity under discussion is not, as Captain Eads argues, the total *mechanical work* performed by the river, which, of course, depends upon the number, as well as upon the supporting power, of all the cubic feet of water in motion; but *the force* which neutralizes the gravity of the earthy matter held in suspension. If this force be less than gravity, a deposit must occur; if it be equal to gravity, the water will be charged to its maximum supporting capacity with earthy matter; if it be greater than gravity, an additional amount of earthy matter may be added without causing a deposit. Now, Captain Eads' theory confessedly requires that the water be always charged to the maximum capacity due to its velocity. The point, then, for observation to determine is, whether there be any fixed relation between the earthy matter suspended in a unit of volume, and the horizontal velocity of that unit of volume. If any fixed relation existed between these quantities, our curves would reveal it; but as they show the reverse, Captain Eads' theory falls to the ground.

That the figures plotted by us correctly represent the quantities in question, is evident when we consider what they are. The mean velocity is the mean of the horizontal velocities of every cubic foot of the river. The amount of sediment was measured by collecting samples of water from three stations—one, 300 feet from the east bank, where the high-water depth was 100 feet; another in the middle, where the depth was 100 feet; and the third, 400 feet from the west bank, where the depth was 40 feet. The total width was about 2400 feet. One hundred grams of river water were collected daily, Sundays excepted, at surface, mid depth, and bottom, at the two deep stations; and at surface and bottom at the other. The figures plotted in our curves represent the mean amount of sediment per cubic foot for the entire river, computed by averaging the results from the eight stations. This averaging is legitimate, because the distribution of earthy matter held in suspension is remarkably uniform throughout the river, as is proved by the following yearly totals:

DISTRIBUTION OF EARTHY MATTER.

STATION.	H. W. Depth.	Total Grams collected in one year.		
		Surface.	Mid-depth.	Bottom.
Near East Bank	100	15·302	17·552	17·830
Near Middle	100	15·156	18·977	19·538
Near West Bank	40	13·845	.....	20·070

The bearing of these figures upon Capt. Eads' theory, as "modified by depth," is too plain to need comment.

To recapitulate the foregoing views in more concise and mathematical language, the problem to be studied experimentally is, whether—

$$S = f(V.)$$

In which S denotes the force which, opposed to gravity, maintains the earthy matter in suspension; and V is the horizontal velocity of the volume of water supporting this earthy matter. Now let us see what our critic proposes to do. If he were not so bitterly in earnest about the matter, his blunder would be funny. He actually multiplies one member of the equation, of which the truth or falsity is to be experimentally decided, by the *discharge*, which is nothing but the product of the area of cross-section (a) by the mean velocity (V); and leaves the other member unchanged, giving:

$$S\,a\,V = f(V).$$

And he then proceeds to congratulate himself, and to apply adjectives to us, in honor of the surprising discovery that, after he has thus placed V in the first member, that member thus modified can be proved to be a function of V.

It would be easy to point out many other minor errors in this division of Captain Eads' review; but after this exposure of the fundamental fallacy upon which his whole argument rests, it would be wasting time to do so.

Our position in the matter simply is, that the earthy matter which the river holds in suspension is chiefly that brought to it in suspension by its tributaries; and that if the amount they supply at any time be less than the velocity would support—as is usually the case in floods from the comparatively clear tributaries, like the Ohio—the water remains undercharged. Captain Eads claims: "If the reader will bear in mind that the water is charged with sediment according to its velocity, and that it flows through a bed of precisely the same kind of material it is carrying in suspension, and that if its velocity is increased it will take up a greater charge from its own bed, or if its current be slackened it will drop some of its charge in the channel, and add to its bed, he will understand the important part which the speed of the current performs in the problem." Perhaps, in thus committing himself, Captain Eads did not know that at Columbus, Ky., twenty miles below the mouth of the Ohio, the waters on the east side of the channel, which have issued from that river, although moving side by side, and with equal velocity with those from the Missouri on the west side, usually contain only about three quarters as much earthy matter in suspension. This fact, stated in the Mississippi Report, is proved by eight months' daily observation at Columbus. It would be ill-natured to wonder whether, if Captain Eads had noticed this ugly fact, he would have announced that, according to his investigations, these data "bear excellent testimony to the care with which Messrs. Webster and Fillebrown conducted the experiments at Columbus."

BED OF THE MISSISSIPPI.

The second main issue which Captain Eads raises with our report is in respect to the nature of the bed of the Mississippi. In this matter he sets up a man of straw, and, after overturning him, claims by so doing to have refuted our views.

As an example of the reckless misstatements of facts which characterize this whole review, I quote the following paragraphs:

"By reference to pages 135 and 137 (Mississippi Report), it will be seen that this extract contains an astonishing exaggeration. Instead of *three years*, the current and sediment observations only occupied *eight months* at Columbus and *one* year at Carrollton.

"When we remember that the junior author of the report on the Mississippi River was a prominent member of the Levee Commission, and that the senior author, as Chief of Engineers, warmly indorsed its report, it is difficult to reconcile this careless statement with the unusual scientific exactness which required four decimals to record their measurements of the current."

Turning to the page next preceding the one mentioned, we find a table giving in detail the results of the *two* years of sediment observations made by a party of the survey at Carrollton; and on page 142, another, giving the details of a continuous series of nearly three months' observations, made by Prof. Riddell. These, with the eight months' records at Columbus, sufficiently sustain the accuracy of our language.

After such an exposure, it is sufficient, without devoting space to other instances of similar inaccuracy in this review, to ask the reader to apply the old maxim, "*ex uno disce omnes*," and take the precaution to refer to the report itself, before accepting as trustworthy Captain Eads' statements respecting its contents.

This precaution is particularly necessary in order to understand our real position in relation to the bed of the river. Captain Eads endeavors to convey to the reader that our views rest solely upon a limited number of soundings in the river itself, and that all the information we possessed on the subject is reported in full in Appendix C. Neither of these ideas is correct. It is nowhere stated, nor is it true, that Appendix C describes every sample brought from the bottom. In the work done by me personally, in which I used one of the transits on the bank, it frequently happened that when the boat brought the specimens for inspection, some uncertainty would exist as to the exact soundings in which individual specimens had been secured. In such cases the samples were not bottled, and no specific entry was made. But the general nature of the bottom was carefully noted, and this information was used in the final report. Captain Eads might as well demand that a botanical collector should exhibit specimens of a plant gath-

ered from every locality in which he discovered it, as to apply such a criterion to our work.

But if this kind of criticism is unfair, for a still stronger reason is the unfounded assumption that our views are solely based upon soundings in the river itself. In the report and appendices will be found stated at length many facts bearing directly upon the geology of the region traversed by the river, and which, from their wide range and perfect accordance with each other, will, it is believed, have great weight with any unprejudiced mind. Captain Eads' whole argument on this point is that of a lawyer endeavoring to raise quibbles, rather than that of a judge, stating the truth in an impartial manner. Readers who desire to study the subject should refer to the report itself, where the arguments are stated in as concise language as can well be used. They proved convincing to every member of the Commission of Engineers to which the subject was officially committed by Congress; and that they do not harmonize with Capt. Eads' wishes and theories, is our misfortune, not our fault.

One other point. Lest Captain Eads' assertion that the shoaling of the bed of the river below Cubitt's Gap proves that crevasses cause a deposit in the channel be accepted as true reasoning, I will simply say, that the location of this break, just above the head of the Passes, introduces anomalous features, which prevent occurrences there from having any legitimate bearing when applied to the river above. The great Bonnet Carré crevasse, above New Orleans, has been open since April, 1874, discharging an immense volume of water at every high stage of the river; and yet no well-marked shoaling has occurred below its site. Captain Eads may perhaps venture to deny this statement, which is fatal to his theories; but the facts set forth in the report of the Commission of Engineers ordered by Congress to investigate and report a plan for the reclamation of the alluvial basin, fully confirmed by later surveys, speak for themselves, and establish my position.

THE ST. LOUIS BRIDGE.

I must now refer to the single paragraph which has called forth this reply to Captain Eads—his other statements, I think, might have been safely left unanswered, to be judged by professional men.

It must be apparent to every reader, that the personal animosity constantly exhibited by Captain Eads toward the Chief of Engineers, and which marks every page of this review, unfits him for taking a fair view of the subjects discussed. This has led him not only to misrepresent the real issues, but also, in the following paragraph, to introduce one entirely irrelevant:

"A few years ago the Chief of Engineers of the United States Army, being equally as well convinced that the steamboat smoke-pipes were, like the bed of the river, unyielding in their nature, and that they were too high to pass under the bridge which spans the Mississippi at St. Louis, accordingly recommended that a canal with a drawbridge, through the bridge approach, to accommodate these unyielding smoke-pipes, should be dug round the end of the bridge in the ancient geologic blue clay in Illinois, at a cost of over three million dollars! The fact that the river water was proved, by 'a glance at the two diagrams,' to be always under-charged with sediment, was an assurance that the canal would be a success and would not silt up. But Congress did not look with favor on this plan. Doubts as to the unyielding nature of the smoke-pipes were openly expressed, and while the canal plans and estimates were being prepared the lucky discovery was made that the whole difficulty could be avoided by putting hinges in the pipes; and so the three millions of public treasure were saved, and the commerce of the river now flows under the bridge without let or hinderance."

This paragraph is full of errors of fact, which might naturally mislead any one not familiar with the subject. The truth is the following:

On account of the strong complaints of navigators of the Mississippi River against the bridge which Capt. Eads was building at St. Louis, a Board of Engineers was convened by the Secretary of War, to examine and report upon the matter.

At one of the public meetings of the Board, after they had become satisfied that the complaints of navigators were well founded, and while they were discussing a remedy, a member stated that the case of the Louisville bridge was somewhat similar, and that he had provided for high-water navigation by a channel cut into the canal bank at the south end of the bridge. He suggested that a similar plan might obviate the trouble at the St. Louis bridge, and proposed a cut into the shore behind the east abutment pier. The Board provisionally adopted this plan, and recommended that the local Engineer officer be charged with the duty of working up the details and ascertaining the cost.

At a subsequent meeting of the Board, the local Engineer officer reported, as the result of his investigations, that the cut with its accessories would cost $922,436, and that the annual expense of operating the draw and keeping the cut open would be $15,000, which, capitalized at 6 per cent, would be $250,000, making a total cost of $1,172,436 (not three millions).

There can be no question as to Capt. Eads' knowledge of these facts, as he published a pamphlet in which he criticised this report with great bitterness.

From his statement above quoted, it would be inferred that Engineer officers had never heard that steamboat chimneys could be lowered, and that as soon as the knowledge that such a thing was possible reached the ears of Congress, it at once decided not to interfere with the bridge.

In the first place, every boat engaged in commerce on the Ohio River is provided with hinges, and this has been the case for many years. Even the little surveying steamer, the Major Sanders, in charge of one of the members of the Board, was provided with hinged chimneys. Evidently, therefore, they were no novelty to him, and the same remark can be made with regard to the other members, all of whom had had much experience in Western river navigation.

In the second place, the Board, in its report, stated that one of the objections to the St. Louis bridge was the following:

"The height under the lower arch is so small that a large proportion of the boats which will have occasion to pass under it must lower their smoke-stacks at all, or nearly all, stages of the river; while many of the larger boats will not be able to pass under it during the higher stages, even with their smoke-stacks down."

And yet Capt. Eads says that the discovery that steamboat pipes could be hinged was made "while the canal plans and estimates were being prepared."

The report of the Board contains no reference to "ancient blue geological clay in Illinois;" indeed, there was no allusion whatever to the nature of the material of the East St. Louis wharf, unless an item in the estimate calling for "earth excavation (dredging)" at 30 cents per cubic yard can be considered as such. Nor was there the slightest reference to the question whether the river water was over-charged or under-charged with sediment; nor was there any "glance at the two diagrams." On the contrary, it was well known that the cut would probably silt up if left alone; and an estimate of $10,000 per annum was included for the specific purpose of keeping this cut open and the walls in repair.

Finally, *the only individual connection of the Chief of Engineers with these matters was, that the reports of the Board were submitted to the Secretary of War through him*, as required by the Army Regulations, and were formally approved, with the recommendation "that the matter be submitted to Congress at its next session for such action as in their judgment may seem to be necessary."

The above facts furnish such a commentary on the paragraphs I have quoted, that their simple presentation is more severe than any language which could be employed. I leave the reader to draw his own inferences.

HENRY L. ABBOT,
Major of Engineers and Brevet Brig.-General.

WILLET'S POINT, NEW YORK HARBOR, Nov. 25, 1878.

THE TEREDO AND ITS DEPREDATIONS.*

By Dr. E. H. Von Baumhauer, Commissioner to the Centennial Exhibition from Holland.

(*Concluded from page* 367.)

4. *Soluble Glass and Chloride of Calcium.*—Pieces of oak and red fir were impregnated at the same establishment at Amsterdam, first with a solution of soluble glass (silicate of soda), and afterward with a solution of chloride of calcium; the object of this double impregnation was to produce in the pores of the wood a silicate of lime. The pieces thus prepared were left in the open air during six months before being placed in the water, in order that the chemical combination might be as complete as possible. These pieces were exposed in the water at Nieuwe-Diep, in March, 1862, and when withdrawn, in October of the same year, the preparation was found to be powerless as a protection against the teredo.

5. *Oil of Paraffine.*—The firm of Haages & Co., at Amsterdam, delivered to the commission some pieces of oak and red fir injected with a substance produced by the dry distillation of peat, to which they gave the name of *oil of paraffine*. In the month of July, 1860, the commission placed at Stavoren and Nieuwe-Diep ten pieces thus prepared. They were examined in the course of the same year, after they had passed one summer in the water, and it was found that they had resisted the attacks of the teredo.

The commission conducted all its experiments thus: They placed in the water ten pieces of each variety of wood, treated according to the prescribed method, so that they could withdraw each year, during ten consecutive years, one of the pieces to be submitted to examination. In making the examination, they removed with an adz the outside of the wood to a depth of some millimeters, which was sufficient to show the galleries of the teredos, if there were any. The pieces found intact were replaced in the water, and the following year their condition was tested in the same way, by removing the shavings as before. By this plan the commission felt certain that, if the blocks were not injured by the teredo during several successive years, they did not owe that protection to a superficial covering, but that the wood itself resisted the destructive efforts of the teredo, and that there would be no reason for fearing that piles, prepared in a similar manner, would, at any time, lose their power of resistance, when injured on their surface by water or ice, or by slow dissolution of the active principle of the preservative substance.

When the pieces of wood treated with oil of paraffine were taken from the water in 1862, after a sojourn of more than two years, or rather during three summers, traces of the teredo were found in the pieces of oak, but not on those of red fir; but when examined in November, 1863, fully-developed teredos were found everywhere, in the fir as well as in the oak, in the pieces whose surfaces had been removed by the adz, but not more than in those which had not been submitted to any examination.

6. *Oil of Creosote.*—This is, as is very well known, a product of the dry distillation of coal-tar, separated by distillation from the more volatile parts, which serve for the preparation of benzole and naphtha, the residuum being pitch. Experiments had already been tried abroad, as well as in Holland, with this substance, and from the beginning of their experiments the commission paid especial attention to this very important method of preparation.

Wood of various kinds, prepared with creosote oil at the works of the Society for the Preparation and Preservation of Wood, at Amsterdam, was placed in the sea in the month of May, 1859, at Flessingue, Harlingen, and Stavoren. In the month of September following, at Flessingue, the pieces of oak, pine, and red fir were found intact, while those unprepared were perforated. In the month of October, of the same year, the pieces of creosoted pine and fir at Harlingen showed a state of perfect preservation. At Harlingen the treated and untreated pieces were fastened together; the teredo penetrated the latter, but had not touched the creosoted wood The same was true of the creosoted exposed at Stavoren, when visited in 1859.

At Nieuwendam, in March, 1859, three pieces each of oak, pine, and red fir, all creosoted at Amsterdam, were exposed in the sea. They were examined in September of the same year. They had been fastened together by cross-pieces of unprepared wood: it was found that the teredo had penetrated, at the juncture of these cross-pieces, even into the creosoted wood, and that sometimes he stopped immediately beneath the surface; at others he penetrated to a depth of several millimeters; in the oak, he worked his way into the interior through those parts of the surface which were not in contact with the unprepared wood.

Experiments with creosote-oil were recommenced in July, 1860, with ten pieces each of oak and red fir, following the plan indicated in paragraph 5. The localities chosen were Nieuwe-Diep and Stavoren; in the latter place the pieces which remained intact the previous year were again

* Extract from the Archives of Holland, Vol. I. Translated by Edward R. Andrews.

placed in the water after their surface had been removed by the adz. Still later, in August, 1861, a further trial was made at these same places with pieces of pine, beech, and poplar, sent to the commission by Mr. Boulton, and prepared at his works in London.

All these pieces were examined toward autumn in 1862, 1863, and 1864. While the unprepared pieces, placed near the others as counter-proofs, were found each year filled with teredos, one could not discover any traces of the teredo in the creosoted pieces, except in the oak creosoted at Amsterdam; in cutting these it was found that the creosote had penetrated them very imperfectly.

A third examination, in 1864, showed that all the pieces prepared by Mr. Boulton, and which had been exposed in the sea since August, 1861, were entirely intact; the most careful examination could not show the slightest trace of the worm, even in the pieces withdrawn from the water in 1862 and 1863, and each time scraped to a depth of several millimeters, and again placed in the water. They resisted the attacks of the teredo perfectly.

An equally favorable and decisive result was obtained from the pieces of fir creosoted at Amsterdam. Notwithstanding they had been exposed in the sea since July, 1860, during five consecutive summers, nothing could be discovered which resembled the galleries of the teredo; one of the pieces, at a point where the color of the wood indicated an insufficient penetration of the creosote oil, showed a very slight worm-eaten appearance; but the absence of the calcareous deposit, and the whole character of the opening, indicated clearly that it should be attributed to some other animal than a teredo.

As to the unprepared pieces, there only remained small ends, which reached above the water. All the rest was converted into a spongy mass which broke at the slightest effort.

The experiment with the creosoted oak was less satisfactory. In all

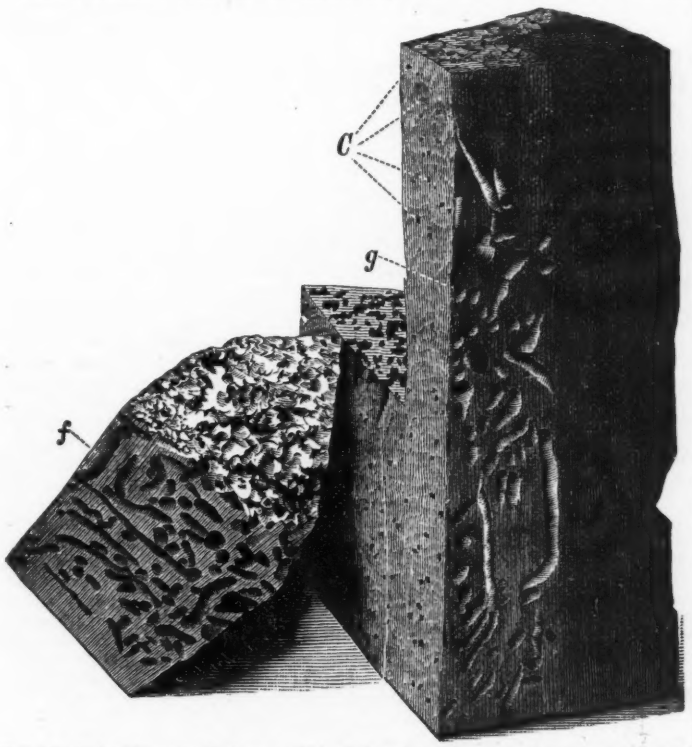

FIG. 15.—This cut was made from a piece of pine-slab, partially creosoted and exposed one season (1877) in the Gulf of Mexico. Only the dark-colored portion on the right side of the block was creosoted for this experiment. The rest of the block, *untreated*, was entirely riddled by the teredo navalis up to the edge of the creosoted portion, but that the destructive marine worm carefully avoided.

the pieces were found, here and there, galleries of the teredo, but always in small numbers; in sawing the wood, it was found that the injuries were invariably in those parts where the color showed that the oil had not been able to penetrate. Although, as far as is known, no effort has been made elsewhere to preserve oak from the teredo, the commission places great value upon experiments with this wood. In fact, for many marine works, oak can not be replaced by any soft wood which absorbs creosote-oil easily. Hence, the commission has had creosoted at Amsterdam, by a newly-perfected process, some pieces of oak, which were exposed in 1864 at Nieuwe Diep; these will not be examined until tested during three summers.*

Petroleum has also been recommended to the commission, but it was not deemed worth while to experiment with it, especially on account of its high price; even although petroleum should prove to be as efficacious as creosote-oil for protecting wood against the teredo, its price would prevent its use for that purpose.

EXPERIMENTS WITH EXOTIC WOODS, OTHER THAN ORDINARY WOODS OF CONSTRUCTION.—The commission has not been able to make many experiments in this direction. It acquired a certainty that the greenhart of Surinam, the bully-tree, the American oaks, and wood as hard as *mamberklak*, are not spared by the teredo. The commission received a large piece of the wood guaiacum, which had been five or six years in the water at Curaçoa, and was found to be entirely eaten by the teredo—an evident proof that even the hardest woods are not safe from the attacks of that mollusk.

The commission has received, it is true, many communications relative to different kinds of wood known to be poisonous to fish, but it has not had an opportunity to experiment with them. We await some light on this point, from researches which the government has ordered to be made at our possessions in both the East and West Indies.

CONCLUSIONS.—By way of recapitulation, the results of the experiments, tried by the commission during six consecutive years, were as follows:

1. The different coatings applied to the surface of wood, with the design of covering it with an envelope on which the young teredo can not attach itself, offer only an insufficient protection; these coverings are likely to be injured either by mechanical means, such as the action of the water, or by being dissolved by the water. Just so soon as a point of surface of the wood is uncovered, be it ever so small, the teredo, still microscopic, penetrates into the interior. Covering wood with sheets of copper or zinc, or with nails, is a too expensive process, and only protects the wood so long as they form an unbroken surface.

2. Impregnation with inorganic soluble salts, generally considered poisonous to fish and animals, does not protect wood from the attacks of the teredo. This want of efficacy must be attributed in part to the fact that the salts absorbed by the wood are extracted by the dissolving action of sea-water, and in part, also, because those salts do not appear to have a poisonous effect upon the teredo.

3. Although we do not know with any certainty if, among exotic woods, there may not be found those which will resist the teredo, we can affirm that hardness is not an obstacle which prevents that mollusk from perforating his galleries; the ravages observed in the wood of guaiacum and *mamberklak* prove this.

4. The only means which can be regarded with great certainty as a true preservative against the injury to which wood is exposed from the teredo, is the oil of creosote; nevertheless, in employing this means, care is necessary that the oil be of good quality, that the impregnation be thorough, and that such woods be used as will absorb oil readily.*

The conclusions arrived at by our commisson are confirmed by the experience of a large number of engineers in the Netherlands, and also in England, France, and Belgium. M. Crepin, a celebrated Belgian engineer, expresses himself thus, in a report on experiments tried at Ostend, under date of February 5th, 1864:

"The result of our experiments now seems decisive, and we think we can draw from them this conclusion: That soft woods, well prepared with creosote, are protected from the attacks of the teredo, and are in a condition to assure a long duration. The whole matter, in our opinion, is reduced to a question of thorough impregnation with good creosote-oils, and the use of such woods as are adapted to the purpose. It has been found that resinous† woods are impregnated much better than other varieties."

M. Forestier, a French engineer at Napoléon-Vendée, in a report dated March 3d, 1864, makes a *résumé* of experiments conducted by himself in the port of Sables-d'Olonne, in the following words:

"These results fully confirm those established at Ostend, and it seems to us difficult to refuse to admit that the experiments at Ostend and Sables-d'Olonne are decisive, and prove in an incontestable manner that the teredo will not attack wood properly creosoted."

Under date of Haarlem, April 20th, 1878, Prof. Von Baumhauer writes to Edward R. Andrews, of Boston:

"I have deferred answering your favor of the 22d of February, until I had corresponded with the chief engineers of the Waterstaat as to the results obtained in their experience in the use of creosoted timber in all our marine works, in large quantities and during some tens of years. They all unanimously agree that the teredo will not penetrate timber thoroughly impregnated with creosote; but that, to obtain the best results, the work must be thorough, as they had observed that the teredo had destroyed piles only superficially injected.

"Fir, if the sap be first withdrawn in a vacuum and then treated with hot oils under a heavy pressure, can be most thoroughly creosoted; but oak is more difficult. Still I have often seen heavy oak-piles where the creosote had entered into the very heart.

"Creosoted wood is also used in our country for railway-sleepers and tramways, and everywhere with the best results. They last four or five times longer than when unprepared, while experience shows that wood treated with sulphate of copper or chloride of zinc (Burnettizing) is neither protected from the teredo nor the influences of humidity and of the atmosphere."

* American oaks of coarse, open fiber are easily impregnated.—TRANSLATOR.

* The efficacy of creosote-oil in protecting wood from decay and marine worms is largely due to the fact that it is insoluble in water.—E. R. A.

† The yellow pine of the Southern States absorbs oil very readily.—E. R. A.

COLORADO.

Special Correspondence of the Engineering and Mining Journal.

GILPIN COUNTY.

More idle mines have lately resumed work in Gilpin County Among them are the Pease claims on the Kansas, the Clark-Gardner, and the Topeka. The Hawley-Gardner, the Hubert, the West Bobtail, one or two claims on the Fisk, the Narragansett property on the Gregory, and the two German lodes were started up a few months ago. If matters continue as of late, there will hardly be a mine left unworked on any of the prominent veins around Central. The Prize, and the most valuable portion of the Bates and of the Buell lodes, are still idle. They were once immensely productive and profitable. Steam hoisting works are being put up on the Sparks claim on the Forks lode. The adjoining property on the latter has been paying well since reopened in August. The Flack will be worked in the same manner at the deep shaft as soon as the owners can agree. The success attending these and many other mines where work has lately been resumed, such as the California, Hidden Treasure, Clark-Gardner, Kansas, Narragansett, the East and West Bobtail, German, O. K., and others, are causing individuals as well as companies to take hold of old mines in every direction. A heavy outlay of money is often required to supply them with machinery, and get them into producing condition, but in no case have such ventures been losing ones to lessees, owners, or companies. To meet the increasing demand for crushing facilities, the old Gregory or Richman and Miller fifty-stamp quartz mill is being entirely rebuilt internally and almost made a new concern. One half of the mill began work on the 22d, and the other half will start up about December 15th. Richard Mackay has nearly com-

pleted a new forty-stamp mill in Nevada for his Kent County mine. The building is of stone and the machinery first-class. The Bradley 22-stamp mill, in Russell Gulch has been crowded with ore since it was started up September 15th, by A. W. Tucker. It had previously been run but little for nine years. Ten more stamps are to be added in December, and a new engine and boiler are to take the place of the old ones. This mill's ore-supply comes from the Champion, Alps, German, Cheatley, Illinois. Topeka, and Roderick or Kinney mines.

For several years, up to 1877, the Buell mine stood in the front rank of producing mines in Gilpin County. For a time it led all others. Its yield, for a comparatively short period of time, was not far from three quarters of a million. There is no doubt but that it would be as productive as ever if sinking was continued to a great depth, as with some of its neighbors. The O. K. forms a portion of the same vein as the Buell or Leavitt, being the western extension of the same. It was opened at a later period, but is proving itself to be one of the best properties in a district where paying mines can be counted by the score. So far, no "stoping" has been done, yet sinking and drifting have paid all expenses incurred below the surface. There is almost one solid body of ore from the surface to the bottom of the shaft, excepting where the levels have been driven, and between, above, and below these levels a body of rich ore extends for a width of from three to four feet. The better portion of the ore sells at from $30 to $90 per ton. The remainder is above the milling average. The shaft is over 300 feet deep, sinking having lately been resumed. This is covered with a spacious building and effective steam hoisting machinery. The ore above the lower level can not be worked out in a long time. The Buell is covered by some of the best mill buildings, and possesses some of the best hoisting and pumping machinery in the mountains. The great vein known as the Buell and the O. K., with spurs and feeders, occupies with its grounds nearly the whole side of Mammoth Hill, where it slopes down into Gregory Gulch, west of the Bates-Hunter and German.

How profitable some of these long-idle properties have become since reopened is shown in the cases of the California and its western extension, the Hidden Treasure. The latter has yielded nearly or quite $180,000 since last February, with a profit of late of from $10,000 to $16,000 per month. The California is gradually becoming equally profitable, although not sufficiently opened yet to permit of the yield that can be relied on this coming winter and spring. One year ago, the shaft now operated was 350 feet deep. It is now 816 feet deep, with levels extending hundreds of feet east and west. The best ore is below a depth of 600 feet. The western part of the Kansas lode maintains the steady and uniform yield of the past five years and keeps from 52 to 62 mill-stamps employed. The Monmouth Company gets its best ore from depths of 800 to 925 feet down. The Alps mine, owned by the Cleveland Company, has lately been showing some fine developments. The vein is from 2½ to 3 feet wide, and is of better quality at the heads of the 450 and 500-foot levels east and west than in the shaft. A new pump has lately been put in the mine and sinking is to be resumed. The Cleveland Company is likely to pay dividends in a few months.

There is no particular change in the New York and Colorado mine, except that better ore than usual is reported in the bottom of the shaft, where sinking is continued. The Briggs, adjoining on the same veins, is said to pay a profit of thousands of dollars monthly. The lessees on the Narragansett 400 feet of the Gregory lode have sunk the main shaft some 40 feet, making a total depth of 535 feet. In the bottom are three feet of ore, with the appearance of a good pocket coming in. Smelting ore brings from $50 to $70 per ton, and mill ore about 3 or 4 ounces per cord. The Consolidated Bobtail is doing better than a month or two ago. The East and West Bobtail properties are both doing finely. The Lacrosse claim, on the Burroughs, is worked steadily, with no unusual features to record. The Cashier keeps on improving in the 100-ft. level from the main shaft, and in the east and west shafts. Some good bodies of paying milling ore have been entered, besides low-grade material in other places. In the level there is also a narrow streak of very rich dirt. A substantial shaft-house, 26 × 56 ft. has been erected over the main shaft, in which a new engine, boiler, and hoisting works will soon be introduced; after that, sinking will be resumed. Another building has also been put up over the west shaft, also a whim. The prospects of this company were never as good as now. The Boston and Colorado Smelting Company will continue operations at Black Hawk until the ore on hand there is exhausted, and until the new works near Denver are in good working order, when the latter will do all the smelting of the concern.

OTHER SECTIONS.

Leadville and Silver Cliff continue to be the centers of attraction and excitement. The cluster of mines on Fryer Hill, near Leadville, are now producing more than all other claims in the carbonate region combined. Their yield has been so large, and is increasing so fast, that an ore blockade has ensued. Transportation facilities are entirely inadequate. Last week, Senator Chaffee and Tabor formed a consolidation of four adjoining claims on Fryer Hill, under the name of the "Little Pittsburg Consolidated." This includes the claim of the same name and the Winnemuc, Dives, and New Discovery. The monthly yield at present is a quarter of a million or more. The adjoining claims, such as the Little Chief, Eva, Chrysolite, and Carboniferous, are all yielding largely. Eighty miles southwest, Alpine district is turning out some rich ore from regular silver veins.

The new town of Silver Cliff, in Custer County, claims a population of over 1000, and is shipping considerable ore to Cañon, Pueblo, and to Hill's works, near Denver. The Maine mine, near Rosita, is again getting into producing condition. At Caribou, in Boulder County, the Native Silver and Caribou mines are turning out as well as usual, and are paying. Near Idaho Springs, more lode mining is being done than ever before. The Mayflower and Lafayette mines, owned in New York City, are being developed steadily, and show ore in all the shafts, as well as in the tunnel. Rich strikes were lately made on both veins, and the production will be large and regular as soon as the requisite developments are effected. The last body of ore opened mills 217 ounces silver. The Hukill is shipping ore in fair quantities, but needs greater concentrating facilities in its mill.

COIN.

SAN JUAN (COLORADO) SILVER MINES.

Special Correspondence of the Engineering and Mining Journal.

BEGOLE'S MINERAL FARM—THE OURAY BONANZA.

The principal work done has been merely quarrying or stripping the veins, which lie up the mountain side from Cañon Creek, and in the midst of dense "quaking asp" and pine timber. In many places the mold or soil, to the depth of a foot or so, has been scraped off in patches—say, six to ten feet square—leaving the rock bare; and which, when you break a piece off with pick or sledge, proves to be solid galena ore. One shaft has been sunk to a depth of 20 feet, and the ore at the bottom is more solid and far richer than it was at the surface. Out of this shaft I got, last year, near the surface, one piece of ore about the size of my fist, which contained malachite, azurite, copper, pyrites, quartz, heavy spar, and iron—seven different minerals; but this mixture disappeared as they went down, running into the gray copper ore, and retaining the blue and green carbonates which nearly everywhere on this property seem to abound in and adjoining the gray-copper streaks.

The altitude of the upper end of the property is about 800 feet above the main street of Ouray, and the altitude of Ouray 7350 feet above sea-level. There is a magnificent water-power in Cañon Creek, just below the property, and the timber practically inexhaustible. Our claims of 1500 feet in length by 300 in width cover about ten acres each, which gives you the size of the "farm," there being four full claims. Openings have been made and work done in twenty or thirty different places, and the amount of ore exposed is almost beyond conception, and must be seen to be realized; but there is one point on which all seem to agree, and that is, that the value of ore *in sight* is worth more than double the sum the owners will sell for; and also that from 200 to 500 men can be worked on the property to advantage at once; indeed, I have heard it estimated by men who ought to know, that with a sufficient force of men, within thirty days from beginning the work, 100 tons of 100-ounce ore per diem could be taken out.

People will naturally say, "If the mine is as you represent it, why don't the owners take out ore and sell it instead of selling the mine?" There are several reasons why they do not. In the first place, it is only within the last few months that we have had reduction works in Ouray. Secondly, the owners do not see fit to take out the ore and give 50 per cent of its value for milling. Thirdly, the owners are not miners by profession, but simply prospectors. Fourthly, the only way to work this property to advantage is with a large force of men, and with works in connection with it to reduce the ores; for this latter there is every facility, but it needs a large sum of ready cash, which the owners have not at their command, Fifthly, they have other property to develop when this is sold, and which they esteem just as highly.

The owners have always asked *one price, cash*, and never varied, and every miner in the country knows what it is; and it is a great loss to our camp that this enormous body of mineral should not be worked.

The trouble seems to be that men who have the capital at their command to purchase the property will not take the trouble to come all this way, and ride in stages, and put up with some discomforts, to see it themselves; but, instead, they send an agent. The agent thinks, as we all do, that it is offered at about half its real value, and sees his way to "make a stake" out of it himself, and doubles the actual price to the man or men who send him. This is "dropped on," the capitalist becomes disgusted, and the purchase falls through.

In the mean time, the owners of the "mineral farm," with commendable pluck, peg away quietly at its development, refusing all requests for leases, bonds, and offers of "part cash," etc., satisfied that, sooner or later, the right man will come along. This is no puff of the property, as the writer is not interested one cent in it, except as a mine-owner and worker in the same district. He would like to see it worked as it should be, and also desires to give reliable information to those seeking good investments in mines or prospects; to which end I believe the ENGINEERING AND MINING JOURNAL is fully devoted. Let your readers believe only half of this if they will, and then *come and see*.

THE GRAND VIEW MINE, OURAY.

Next day, in company with a friend, and Mr. James Law, the superintendent of the Grand View mine, I paid a visit to that property. Strolling down the Ouray and Lake City toll-road about half a mile, and passing through the toll-gate, we turned to the left, and, crossing the Uncompahgre on a foot-bridge, commenced the ascent of the almost perpendicular sides of the mountain in which the mine is located. Our course lay through dense pine timber and over a capital trail which, by a series of zigzags, made the ascent easy, and in about fifteen minutes from the flat we arrived at the entrance to the lower level. From the trail, as we ascended, and some distance below the first adit, we crossed the out-crop of the vein, and, looking upward, could trace it to the first level, then to the upper one, and from it onward up the face of the cliff toward the summit, where, Mr. Law informed me, it out-crops, showing on the surface the same ore as he has in his workings. This extension of the Grand View, the Chicago, is owned by Messrs. Squires and Terpening, of Ouray, and is said to be a most promising prospect.

To digress somewhat: the first man who "stuck a stake" on the Grand View is popularly supposed to have been Prof. Hayden, when he passed through here on one of his geological surveys in 1875; but whether the Professor staked it for fun, or whether he found so many here that, in his *embarras de richesse*, he gave them all up, the historian saith not; certes, however, he did no assessment work on it, and so it came to be located and worked by other parties, who, in March of this year, sold it, then the merest of prospects, to Mr. E. F. Burton, late Deputy Surveyor of the Port of New York, for $8000 cash. There can be no harm in stating the price paid, as every one here knows it, and the property is not for sale; moreover, it gives those of your readers who desire to invest a sort of idea of the price at which promising mining properties can be purchased here.

To return to the mine: as the men were just about firing a blast, we ascended the trail 80 feet to the upper level, and examined it first. Entering, we saw on the roof from the entrance to the breast (140 feet), the pay-streak varying much in solidity of ore, and also in width, namely, from 15 inches to three feet, but I think I am speaking within the mark when I

say that it will average two feet in width. The ore is iron and copper pyrites, small quantities of galena scattered through, and blue and green carbonates of copper, in a curious-looking gangue, which none but an experienced mineralogist could describe accurately. It appeared to me like a sort of conglomerate of limestone, calc-spar, porphyry, and quartz. The larger proportion of the ore is massive copper pyrites, tarnished a deep yellow, and some iridescent; the iron pyrites very pale in color, in small cubes, and massive; the malachite and azurite earthy; the galena in very small quantities, bright, and retaining its cubic cleavage. Descending, we now entered the lower workings, and found that they had nine or ten inches of a streak, carrying copper and iron pyrites in small quantities, and in the same gangue as that above. But since I left Ouray and returned to camp, where I write this, the superintendent sends me word that on the 2d of November, being 80 feet in, they struck 8 inches of as rich ore as they have in the upper level, and that it continued to widen at every shot, and by this time they have probably run under and got the same body of ore as they have in the upper workings, as Mr. Law is running a day and night shift on it. This, in my opinion, promotes the Grand View from the rank of "prospect" to that of a *mine*, as Mr. Burton can now reckon his reserves of ore.

Assays from this ore have given as high as 43 ounces of silver and 25 ounces of gold to the ton, and mill runs of the ore, $100 to $150 value to the ton—$14 to $20 of this being silver, the rest gold. Mr. Law informed me that the ore sent to the mill was hardly sorted at all, but sacked up almost as it came from the vein; indeed, it would be almost impossible to hand-dress this ore, as, the gold not being free, it is rather more of a conundrum where it is *not* than where it *is*. Pieces of the gangue, apparently barren, have been found, on assay, to contain gold, and, as they gain depth, the yield of silver decreases and that of the gold increases. The iron and copper pyrites in this vein are also auriferous; so that the only way to treat this ore will be with, as Mr. Law expresses it, a "coffee-mill" of their own which will grind up every thing that comes from between the walls, which in this mine are clean and well-defined. As a site for his "coffee-mill," Mr. Burton owns a placer claim or twenty-acre tract which takes in the river and flat at the foot of the Grand View, and his surface ground is covered with good, pure timber. Mr. Burton is expected here daily, and on his arrival it will be decided what method of reduction will be most suitable, and, that done, the erection of works commenced at once.

Up to this date (Nov. 14th), we have had a glorious fall, and at this altitude (11,200 feet) we have now only about one foot of snow on the level, the trails being open from here to Ouray and pack-trains still running. The thermometer has not yet fallen lower than 10 degrees below freezing and now (noon) stands at 40° Fahrenheit in the shade. My partner and I have built ourselves a snug log-house, and an ore-house and blacksmith's shop close to our tunnel mouth in the timber at the head of Imogene Basin, and are "fixed" for nine months' solid work. We shall work the Norma and Crusader, both on a vein adjoining and parallel to the Hidden Treasure, of which I have written in two former letters. My aneroid barometer tells me our cabin is 11,200 feet above tide-water, and as I rise at daybreak I can hear far above us the crow of the ptarmigan cocks as they challenge one another from crag to crag before descending with their wives to the red willows in the flat, there to breakfast on the buds.

W. W.

MINING NOTES FROM THE NORTH SHORE OF LAKE SUPERIOR.

Special Correspondence of the Engineering and Mining Journal.

The Duncan Mine has been working steadily all summer, but the progress has been slow, owing to delays caused by introducing air-drills that were not adapted to the work. All defects have now been overcome, and the winter's work is likely to be much more rapid. The prospects here have improved greatly. There has been a steady increase in the quantity of silver found, and the appearance of the vein, as depth is gained, shows the mine to be well worthy of the persevering spirit with which its development has been followed up in the face of adverse fortune.

The work has already developed considerable ore that will pay for crushing, but the ground must first be opened both in depth and by drifts before a large supply can be realized.

An obscure sheet of the south shore, whose remarks would carry no weight except when copied into journals of more ability, made an adverse criticism on this mine, which would apply as well to any undeveloped mine, especially to some of the greatest successes in the country, even their own dear Calumet.

The total expenditure in this attempt to develop a paying industry here has not equaled the loss from some of the egregious blunders made at the latter mine.

With the improved appearance of Duncan, International becomes one of the best risks there is; very little to lose at present price, and a certainty of success when the former succeeds. This property affords a very favorable place for exploration, as two large veins form a junction which at Silver Islet proved to be the place for the new bonanza; and then the vein presents a rather more favorable appearance than Duncan did in the same barren belt. Three hundred feet of shaft will strike the second silver-bearing belt. This should be put down at once.

Great disappointment is felt in the failure to start up the Beck mine, as had been promised for this fall. It is compensated, however, by a great excitement at Prince Arthur's, caused by the finding of a silver mine in the street.

Small stringers of vein matter appeared in the out-crop of trap just by the docks, on which, some years since, a man set up a mining claim, but was driven off by the town powers. As the town had a fair prospect of going to sleep, for the winter at least, some uneasy spirit attacked these indications once more. A blast or two exposed small stringers full of native silver and ore in very favorable country rock, and at last accounts there had been a steady improvement in size. Before the next accounts reach us overland, this may have become the coming mine.

A little work was done on Spar Island, belonging to Prince's Bay location, perhaps for political effect, but which succeeded in finding considerable copper glance, rich in silver. This property has been in chancery for a long time, but I believe it is now free, and the good results may lead to active work another season.

Col. Baker has his Pigeon River claims now organized for active work the coming season. The surface indications warrant the expectation of great developments in this part of the country.

There is a rumor that the gold mines of Jack Fish Lake will be worked the coming summer. I know of nothing more promising. Free gold tellurides, with copper pyrites, occur in large veins entirely unexplored. Specimen assays never show less than $50, and often many thousands. The Dog Lake location has been bought up by one of the partners, who proposes to give the vein a good test. Large quantities of base metals have been found, but as yet mere traces of silver. All other claims remain idle.

The Victoria mine, near the Sault Ste. Marie, has developed some fine ore, running 165 ounces of silver and 25 to 65 per cent of lead. They are building a mill for concentrating the low grades, but it will not be finished until next spring. The vein here has been found faulted often; but when once the laws governing the faults have been learned, there will not be much loss, as the faults are not great.

The amount of solid mineral is large and the stamp rock beyond estimate until experience has shown how much of the leader-bearing rock will pay the costs.

The North Shore mines require large capital, but I have no doubt that careful explorations will prove many of the large barren veins to carry rich ore belts in favorable country rock.

I would advise any company to test the strata with the diamond drill; not so much to strike silver, as to see how deep a favorable belt would be met with.

"EZUEST."

ELECTRIC LIGHTING.

The electric light is seen to the utmost advantage in the Paris Hippodrome. Five burners irradiate a company of 10,000. The dresses of the troupe are specially selected with a view to the effect of the light on coloring, and a phalanx of cavalry girls (riding astride) has a dazzlingly splendid appearance.

THE ELECTRIC LIGHT IN IRON WORKS.—Every great industry, in its turn, is taking advantage of the electric light. Our latest advices from England state that the enormous steel works of Messrs. Bolckow, Vaughan & Co., of Middlesbrough, have made arrangements for introducing it in all departments.

SUBDIVISION OF THE ELECTRIC CURRENT.—Efforts at dividing the electric current date back three years, when Mr. Moses G. Farmer, superintendent of the Government Torpedo Station at Newport, Rhode Island, succeeded in so distributing a current generated by a small machine as to supply forty-two lights.

THE EDISON LIGHT ABROAD.—LONDON, Dec. 4.—Mr. J. H. Russell's objection to the grant of a patent to Mr. Edison, the American inventor, for his electric light, is that he (Edison) is not the true and first inventor of the light. The *Times* says that several rivals are in the field, who claim to be before Edison with his alleged invention.

VIBRATING ELECTRODES.—Professors Thomson and Houston have introduced the method of horizontal vibration in the electrodes for producing light, these alternately touching and receding, but so quickly that the actual flashes appear as a continuous light. It is found that with this vibration a fuller current than ordinary is required. The preferable plan is for the positive electrode to remain stationary.

THE ELECTRIC LIGHT IN THE ENGLISH PATENT OFFICE.—The Revenue of the English Patent Office is being greatly increased by the number of applications for appliances in connection with the electric light. It is said that as many as two or three applications are filed every day, and that the inventive genius of the old world has never been so active as at the present time.

IMPROVED ELECTRIC LAMP.—In the belief that the wastage of carbon in the electric lamp is due, not to the incandescence but to chemical decomposition from the action of surrounding compound gases, Mr. Sawyer charges his lamps with pure nitrogen. The disintegration of carbon due to sudden heating is provided for by a switch by which the light is turned off gradually. This switch has also the advantage of uniform resistance, which aids the ready division of the electric current.

RAPREFF'S ILLUMINATING SYSTEM.—In this system, which involves the giving off of a continuous electric current for a number of lights, as distinct from alternating currents, the carbons employed meet simply at the point of illumination. The electric current enters the carbon two inches from the luminous point, thus minimizing the resistance and also rendering it uniform, independent of the length of the carbon. The adjusting arrangement allows the carbons to progress according to the rate of combustion. A second burner is held in reserve, which is automatically set alight by the current should the first one from any cause be extinguished.

UNIFORMITY IN ELECTRIC LIGHTS.—Good quality and steadiness are the great requirements in electric light, intensity and duration being, after all, somewhat subordinate considerations. One point which inventors and manufacturers have had in view is the preventing the irregularities of one lamp extending to others. In this connection may be mentioned the regulators introduced by M. Lontin. In one of these regulators the travel of the carbons is rendered uniform by an electro-magnet, which causes two endless screws, with threads in opposite directions, to revolve. In the other, a round bar, which runs lengthwise with the carbons, is similarly actuated, beveled gearing being employed for the propulsion.

THE WENDERMANN ELECTRIC LIGHT.—Instead of separating the ends of carbon electrodes by a certain space—in other words, adopting the electric arc space in his electric lamps—Mr. Wendermann places the point of the rod and the surface of the disk in contact, and obtains facilities for dividing the light. The intensity of the current produced is found to be low relatively to the quantity. Very moderate power is requisite to generate an effective current which will supply a number of lamps. It is claimed that the arrangement of the carbons—the contact between the two being only a point—offers the least possible resistance to the current. One electrode is a disk in saucer form, the rounded part downward; the other carbon is kept in contact with the lower surface of the former by a

spring collar, which also forms the circuit connection. It is claimed that this connection of the carbons offers the least possible resistance to the current. In an experiment made, the flame, though unprotected, proved neither undulating nor flickering.

NOTES.

An application has been made to grant permission for laying steam-pipes in the Chicago streets, on the Holly plan, for an Illinois company organized with a capital of $300,000. A company has also been organized in Detroit for the same purpose.

The papers all over the country contain leaders and other articles on the electric light. One paper hopes Edison will be a philanthropist, and not permit his inventions to pass "under the control of soulless corporations to the detriment of the people."

Silveroid is the name of a new metallic composition which has just been introduced in America in the manufacture of table-ware. "It has a fine texture, is susceptible of a high finish, and can be supplied at much less cost than any thing heretofore used as a substitute for real silver."

Improvement in the Telephone.—That the telephone is open to improvement admits of no question. The leading fault hitherto attaching to the working is the interference with the clear enunciation and even the transmission of messages by vibrations from extraneous causes other than the voice acting on the disk of the receiver. We hear that Professor Bell has discovered a corrective.

Nickel.—This metal, like iron, is magnetic; sufficiently ductile to be forged and drawn into slender wire. Its point of fusion is very high, and if melted in a brasque crucible it yields a homogeneous regulus of a silvery whiteness containing carbon. The author has examined whether nickel, like iron, when carbureted, is capable of being tempered and acquires elasticity, and whether it renders steel less susceptible of oxidation. The result was decidedly negative, except that alloys of iron and steel, with large proportions of nickel, 30 per cent and upward, resist the oxidizing action of air and water.—*Boussingault.*

Non-Transparency of Flame.—It has been commonly believed that flame is transparent. Some observations have lately been made by M. Van Eyndhoven on the flame of a bat's-wing burner with one of Sugg's photometers, and he found in two experiments a difference of 1·5 candles, or 17 to 18 per cent, between the narrow and the broad side of the flame—the latter giving most light; whence he infers that the flame is not transparent. For this reason the entire luminous power is not obtained from an Argand burner. For good street lighting, the slit of the burner and the direction of the street should be at right angles to each other.—*Eng. Mech.*

Ingenious Application of Electricity in the Arts.—A new and useful application of electricity has been made by an American inventor to the apparatus for reeling silk from the cocoon. The delicate filaments of silk are carried over wire arms, which are so nicely balanced that they do not press against the silk strongly enough to break it, and in this relation a current is kept open; but if the filament breaks, the arm falls, the circuit is closed, and an electro-magnet instantly stops the reel until the break is repaired. As the work is now done, the detection of a broken filament depends entirely upon the skill of the workmen, and the work must be carried on slowly that the eye can note any break, while with this automatic stop it is said the labor will be much more rapidly done and a more uniform thread produced. The invention is being introduced into France and Italy, the two great silk-producing countries of Europe.

Under-Ground Telegraph Wires.—The city council of Philadelphia have ordered the removal of telegraph poles from the streets of that city, and experiments are being made to produce a wire that could be laid under ground and worked satisfactorily. The McKeesport *Times* gives an account of some interesting experiments, made at the tube works, in manufacturing "insulated wire." The wire is now being made in sections of ten feet, but can be made as long as thirteen feet. To make the wire, a copper telegraph-wire is inserted in a glass tube of the same length, and sufficiently large to admit the wire easily. The glass tube is then inserted in an iron tube just large enough to admit it. They are all then placed in the furnace and heated to a red heat, and then run through the rolls, which compress copper wire, glass, and iron tubes, all into one mass, but without crushing them. The ends are then ground to a convex surface, and the ten-foot sections coupled together like gas-pipe, the convex ends allowing the centers to strike first, thus establishing the electrical connection. The pipe will be enameled before being laid.

New Uses for Bessemer Steel.—The London *Ironmonger* remarks that the uses to which Bessemer steel is being put are ever extending, and it is in a corresponding degree displacing the older materials, especially iron. Of late this easily-made and cheap steel has been received with much favor in quarters where it had been previously viewed with not a little suspicion. We are given to understand that the Admiralty have decided to adopt the use of anchors made of Bessemer steel, and that they will also permit of certain other naval and dock-yard requisites being manufactured therefrom, in place of that rigid insistance in favor of best wrought-iron, which has always hitherto been the rule.

The same paper also states that Messrs. Brown, Bayley & Dixon are now putting down furnaces and all the necessary appliances for producing a superior description of Bessemer steel, suitable for many of the Sheffield trades, and, as it will be possible to offer it at about the same price, it will, it is believed, supersede the commoner qualities of cast-steel which are now worked up. With the perfecting of the Bessemer process the probability is becoming more and more apparent that the time is not distant when this description of steel will take the place not only of cheap cast-steel, but of wrought and other iron.

Age of Car-Wheels.—The *Railway World* says that the Pennsylvanio Railroad Company took out, in February, 1876, two pairs of 33-inch Pullman car-wheels that had run, respectively, 110,008 and 159,312 miles, one of the wheels being still worth putting under a freight car. Of the 114 33-inch Pullman car-wheels taken out in that month, 29 had run over 70,000, 13 over 80,000, and six over 90,000 miles. The company has record also of one 33-inch wheel that had run 169,000, and another 178,000. The average mileage of all the 33-inch passenger car-wheels (worn out) renewed during the first six months of 1878, was 73,760.

All the above were made under the Hamilton Steeled-Wheel Company's patent, and all by the Pennsylvania Railroad Company, with the exception of the one reaching 178,000 miles, which was made by Whitney & Sons, of Philadelphia.

The firm mentioned above showed a thirty-three inch passenger car-wheel at the Centennial Exposition that had run 120,000 miles, and has lately received two pairs of thirty-inch passenger car-wheels of 80,000, and a pair of twenty-eight-inch tender wheels of 135,825 mileage, all of their make. Taking into view the difference in circumference from the above, the forty-two-inch wheels may, from their data, be reasonably expected to make more than 150,000 average mileage.

Heat Experiment.—In the French Academy the other day, M. Hirn called attention to a curious case he had observed of heating of a bar of iron. The bar (about 1m. long and 0·08m. diameter) was being held by a workman on another piece, while a second workman hammered its free end. At each stroke the workman holding the bar found that it suddenly became greatly heated, then suddenly cooled. M. Hirn, on holding the bar, had a like experience, and, to his great surprise, the sudden variation of temperature seemed to him nearly thirty-five degrees. He was surprised because a calculation of the work done did not seem to give any thing like a beating effect. The phenomenon is best observed when the bar is seized very near the free end. M. Hirn considers the effect in question to be of a wholly subjective character—that is, one of sensation. The source of heat, indeed, on careful observation, seemed to reside in the interior of the hand, not at the surface of the metal. He thinks sonorous vibrations may, in certain circumstances, cause, at the periphery of the body, a sensation of heat, just as a blow on the eye or pressure there may awaken the sensation of light. He suggests, however, to make the experiment of examining the state of the bar (when struck) by means of a Melloni thermometer.—*Eng. Mechanic.*

GENERAL MINING NEWS.

CALIFORNIA.

THE BODIE DISTRICT.

From the *Standard* of the 28th ult. we take the following:

"During the week we have visited many mining locations; have been down shafts on cages, buckets, and ladders; have explored drifts and winzes without number. Everywhere we find the same unvarying, cheering prospect. The leading mines are producing their usual quota of ore and explorations are developing more valuable ground in each. We hear of a number of mining sales having been made within the past few days, all of which have been disposed of to responsible parties who propose to at once commence work upon them. The late break in Comstocks has not affected the listed mines in our district to the extent that it was feared it would do, and we are still of the opinion that instead of acting detrimentally the result will be eventually to make Bodie securities come to the front with renewed strength and activity."

MONO.

"The most extensive and perfectly arranged works in Bodie District have just been completed over this mine. The engine and boiler are of the most improved pattern, and the hoisting-gear is capable of sinking the shaft to an indefinite depth. The main shaft, consisting of two large compartments, is now down 275 feet. At the 250 level the drifts are being pushed vigorously ahead, and the prospects for a larger ore-body than ever found in the mine are excellent. The guides for cages will be completed to-day, when larger quantities of ore can henceforth be raised to the surface.

RED CLOUD CONSOLIDATED.

"The west cross-cut from the north drift of the Red Cloud ledge in the 250 level has attained a length of 175 feet. The character of the rock in the face indicates the approach of the Packard and Morton vein. The west cross-cut from the south drift of the Red Cloud ledge has attained a total length of 74 feet. The stratum of ore which lies 6 feet west of the shaft in the main west cross-cut has been passed through. It is 28 inches in width, and prospects well in gold. The north drift on the Red Cloud vein has attained a total length of 193 feet, with no change. Work will be discontinued in the mine until the new machinery is in running order.

BODIE.

"The Bruce south drift is in 246 feet; in about 30 feet further it will connect with the cross-cut with the new shaft. The Bruce and Gildea ledges have run together. The ledge in the face is looking well, and is about 4 feet wide. The drift north from the bottom of the Bruce winze is in 40 feet; the drift south is in 31 feet. The vein is looking fine. Cross-cuts have been started from the bottom of the winze east and west, to connect with the Gildea on the one side and the Burgess on the other. The cross-cut from the new shaft is in 15 feet, and will have to be driven about 15 feet further to connect with the old works. Sinking of the new shaft has been resumed. The mill is running steadily, and every thing is working well.

STANDARD.

"The east cross-cut from the main shaft is in 43 feet; progress during the week, 11 feet. The south drift from this cross-cut is in 25 feet; ledge, 1½ feet wide. The south drift, from the west cross-cut, is now in 37 feet—a progress of 20 feet for the week. The West Standard, south drift, on the 450 level, has been advanced, since last report, 27 feet; total length, 165 feet. The ledge is two feet wide, of very good ore. A distance of 33 feet is yet to be run to connect with the north drift from the Bodie mine. An east cross-cut is being run on the 300 level, south of the incline, which is now in 45 feet. The stopes continue to have their usual good appearance. It is expected the new machinery will be running at the new shaft in a few days."

NEVADA.

THE COMSTOCK.

From the mining summary in the Gold Hill *News* of November 27th, we take the following:

"The 2200 drift of the Sierra Nevada has now penetrated ore that will mill from $80 to $100 per ton, for a distance of 30 feet, the face this morning being in ore that assays from $60 to $90 per ton, with no indications whatever of the west wall of the vein. To say the least, so far as opened, this is one of the finest ore developments ever made on the Comstock, and the best of mining judges do not pretend any more to estimate the coin value of the stock at less than $50 to $100 per share.

"The 2200 level of the Ophir has been reached, and a station set of timbers put in, and as soon as a sufficient depth below is attained for a sump, opening up the 2200 level will be commenced in good earnest. The 2000 north drift of this mine is being pushed with all the speed possible to connect with the North Consolidated Virginia shaft when it reaches that level, and the south drift on the same level in the California to connect with the C. & C. shaft, these drifts form-

ing one of the largest and most important and necessary air-galleries ever opened on the Comstock.

"The lower levels of the bonanza mines are gradually cooling, and the men are being put at work as fast as room can be made and they can be worked to advantage.

"The big drain tunnel running to connect the Hale and Norcross and the Chollar-Combination shaft on the 2600 level, is being pushed ahead at the unprecedented rate of 10 feet per day, it being the fastest work of the kind ever done on the Comstock. It will reach and connect with the Combination shaft in about five weeks' time.

"At the Justice, Overman, Belcher, and Crown Point mines there are no new or important features to note. The Alta is showing a steady improvement on both the 1450 and the 1550 levels going northward.

"The south lateral branch of the Sutro Tunnel, toward the Julia shaft, is making excellent advancement in favorable working ledge matter, and is in to-day 720 feet from the main tunnel, having accomplished over half the distance to the Julia shaft. Temperature at face of header, 100°. Owing to this great heat, the miners will be put upon six-hour shifts on and after the first of the coming month. Good progress continues to be made in the construction of the large sub-drain or canal beneath the floor of the main tunnel, to carry off the hot Comstock water when it shall be ready to receive it."

NEW PATENTS.

The following is a list of the new inventions relating to Iron, Coal, Mining Machinery, Chemical Apparatus, and the treating of Precious Metals, etc., from *The Official Gazette of the United States Patent Office*, for the week ending October 29th:

No. of Patent.	*Title of Invention.*	*Name of Inventor.*	*Residence.*
209,323	Pumping Apparatus for Raising Water	Francis A. Bishop	San Francisco, Cal.
209,336	Hoisting-Machine	John Fensom	Toronto, Can.
209,341	Dumping-Wagon	John W. Harrison	Niles, Mich.
209,344	Lifting-Jack	Jacob O. Joyce	Dayton, O.
209,347	Apparatus for Boring and Drilling Wells	Orin Martin	Bloomfield, Ia.
209,350	Process for Purifying Gas	Henry W. Merritt (a)	Somerville, Mass.
209,424	Expansion Steam-Trap	John J. Royle	Manchester, Eng.
209,432	Excavator	Anderson W. Terrill	Mexico, Mo.
209,486	Tool for Extracting Obstructions from Deep Wells	James H. Luther	Karns City, Pa.
209,513	Pump	Augustus B. Prouty	Worcester, Mass.
209,514	Steam-Boiler and Furnace	Cullin W. Reed	Chagrin Falls, O.
209,525	Pump-Valve	John J. Tonkin (b)	Richmond, Va.
209,532	Dynamo-Electro Machine	Edward Weston (c)	Newark, N. J.

(a) Assignor of one half his right to William H. Ireland, Boston, Mass.
(b) " " " John N. Van Lew, same place.
(c) " to Western Dynamo-Machine Co., same place.

PROPOSALS.

For the benefit of many of our readers, we compile weekly such proposals and solicitations for contracts, etc., as may be of interest. The table indicates the character of proposals wanted, with the full name and address of parties soliciting the same:

Building and Laying a City Passenger Railway on a route of about 12 miles in a large city; full particulars; B. H. Haines, 3380 Third street, Philadelphia	
Grading Central avenue, Westwood, O.; Robert A. Armstrong, Village Clerk	Dec. 9
Steam Launch, Labor and Material Necessary to Construct; Light-House Board, Treasury Dept., Washington, D. C.	" 11
Heating Apparatus; Geo. W. Wicks, Louisville, Ky	" 12
Dredging near Snow Hill, in Pocamoke River, Md.; Wm. P. Craighill, Major of Engineers, Baltimore, Md	" 17
Constructing about 200 miles for the Northern Pacific Railroad, from the Missouri River to the Yellowstone; Charles B. Wright, President Board of Directors, 23 Fifth avenue, New York City	" 17
Dredging in Currituck Sound, N. C.; Chas. B. Phillips, Captain of Engineers, Norfolk, Va.	" 20
100 Two and Four-Horse Army Wagons; D. H. Rucker, Assistant Quartermaster-General U.S.A., Philadelphia, Pa.	" 31
Railway Construction from the Province of Ontario to the Pacific Ocean, about 2000 miles; F. Braun, Secretary Dept. of Public Works, Ottawa, Canada	Jan. 1, 1879
Railway Construction, 310 Miles; F. Braun, Secretary of Department of Public Works, Ottawa, Canada	"
106,000 gallons Best Quality, Winter-Strained, Pure Lard Oil for U. S. Light-House Service; John Rodgers, Rear-Admiral U. S. Navy, Washington, D. C.	Jan. 8, 1879
Gas Illumination of Rio de Janeiro, Brazil; Salvador de Mendonca, Brazilian Consul-General, 42 Broadway, New York City	March, "
Locks and Keys for Mail Bags; D. M. Key, Postmaster General, Washington, D. C.	March 20, "
Coal for Schools of Youngstown Board of Education, Youngstown, O.	March 29, "

A project to form a new company to buy the Philadelphia and Atlantic City Narrow-Gauge Railway, and convert it into a first-class broad-gauge road, is about being consummated.

ADDITIONAL PUMPING-ENGINES FOR THE NEW YORK WATER WORKS.—The resolution of the Common Council, authorizing Commissioner Campbell, of the Department of Public Works, to expend the sum of $220,000 for the erection of pumping-engines at Ninety-seventh and Ninety-eighth streets and Ninth avenue, for high-water service, as provided for by an act of the Legislature, has been sent to Mayor Ely for his signature.

MEXICAN RAILROAD PROSPECTS.—Mr. Foster, the United States Minister to Mexico, in the course of a communication chiefly devoted to a discussion of the opportunities for increasing commerce with that country, says that "this government can do something toward the improvement of communication with Mexico by steamships, but that without an international railroad to the capital no considerable trade can be maintained. Under this head he aims to establish the following points: That the Mexican government will not consent to any treaty, stipulation, or other international agreement for the joint protection of such a road, and that it requires all the employés and the capital of the company formed for that purpose to become Mexican for all the purposes of the enterprise; that the last Congress positively refused to grant a charter for an American company, and the present Congress has manifested the same opposition; and that the Mexican government, owing to its financial condition, is absolutely unable to pay any subsidy for the construction of the road."

STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative statement for the week ending Nov. 30th and years from January 1st:

TONS OF 2240 LBS.	1878.		1877.	
	Week.	Year.	Week.	Year.
Wyoming Region.				
D. & H. Canal Co.	58,683	1,927,535	75,519	1,689,762
D. L. & W. RR. Co.	56,962	1,961,830	71,557	1,793,034
Penn. Coal Co.	32,421	857,308	25,210	953,315
L. V. RR. Co.	26,285	765,041	16,607	834,033
P. & N. Y. RR. Co.	472	30,118	846	40,990
C. RR. of N. J.	26,236	886,173	41,567	1,220,158
Penn. Canal Co.	5,573	345,727	10,136	350,397
	206,632	6,773,732	241,472	6,881,769
Lehigh Region.				
L. V. RR. Co.	64,727	2,238,318	56,148	3,078,594
C. RR. of N. J.	37,785	1,245,585	34,242	1,388,118
D. H. & W. B. RR.	2,758	35,790	2,113	31,041
	105,270	3,519,693	92,503	4,497,753
Schuylkill Region.				
P. & R. RR. Co.	188,683	4,806,156	167,306	6,283,272
Shamokin & Lykens Val.	26,104	725,939	11,504	665,562
	214,787	5,532,095	178,810	6,948,834
Sullivan Region.				
Sul. & Erie RR. Co.	1,273	32,773	350	18,762
Total	527,962	15,858,293	513,135	18,347,118
Increase	14,827			
Decrease				

The above table does not include the amount of coal consumed and sold at the mines, which is about five per cent of the whole production.

Belvidere Delaware Railroad Report for week ending Nov. 30th:

	Week.	Year. 1878.	Year. 1877.
Coal for shipment at Coal Port (Trenton)	824	14,052	54,390
Coal for shipment at South Amboy	13,365	402,094	495,943
Coal for distribution	6,472	179,093	179,735
Coal for Company's use	1,033	76,925	65,784

Coals Cleared on the Canals of the State of New York for the week ending Nov. 14th, and year from the opening of navigation:

Tons of 2000 lbs.	1878.		1877.	
	Week.	Year.	Week.	Year.
Anthracite	26,548	607,485	42,647	999,096
Bituminous	7,102	190,504	9,382	260,509
Total amount cleared	33,650	797,989	49,029	1,259,605

Shipments of Anthracite Coal during week ending November 23d, 1878, and total for year to date, compared with corresponding time last year, as prepared by Mr. John H. Jones, Accountant of the Anthracite Board of Control.

INTERESTS.	Week. Tons.	Cwt.	Total for year to date. Tons.	Cwt.
Philadelphia & Reading R.R.	176,038	15	4,594,883	16
Lehigh Valley R.R.	98,829	8	3,064,419	11
Central R.R. of N. J.	69,803	18	1,956,760	16
Del., Lack. & West. R.R.	64,507	14	1,912,172	7
Del. & Hudson Canal	53,501	15	1,786,826	5
Pennsylvania R.R	38,254	17	1,206,478	11
Pennsylvania Coal Co.	22,821	17	865,236	15
Total	523,758	4	15,386,778	1

INTERESTS.	Corresponding time last year. Tons.	Cwt.	Difference. Tons.	Cwt.
Phila. & Reading R.R.	6,104,488	14	D. 1,509,604	18
Lehigh Valley R.R.	4,016,885	17	D. 952,446	6
Central R.R. of N. J.	2,422,484	3	D. 465,723	7
Del., Lack. & West. R.R	1,883,644	10	I. 28,527	17
Del. & Hudson Canal	1,690,202	0	I. 96,624	5
Pennsylvania R.R.	1,388,131	0	D. 181,652	9
Pennsylvania Coal Co.	975,355	0	D. 110,118	5
Total	18,481,171	4	D. 3,094,393	3

NOTE.—The tonnage for the week on this statement is approximated from the weekly returns of the transportation companies, and is subject to adjustment each month to conform to the returns made by each interest to the Board of Control

The increase of shipments of Cumberland Coal over the Cumberland Branch, and Cumberland and Pennsylvania railroads amounts to 121,600 tons, as compared with the corresponding period in 1877.

Receipts and shipments of coal at Chicago Ill., for the week ending Nov. 30th, and year from January 1st:

	Week. Tons.	Year. Tons.
Receipts	51,055	1,670,414
Shipments	6,953	266,218

Perth Amboy Business:	Tons.
Received for the week	36,391
Shipped for the week	16,110
On hand Nov. 30th	75,465

The Production of Bituminous Coal for the week ending Nov. 30th was as follows:

Tons of 2000 lbs., unless otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2,240 lb.	37,582	1,570,723
Barclay Region, Pa.		
Barclay R. R., tons of 2,240 lbs.	6,315	282,567
Broad Top Region, Pa.		
Huntingdon and Broad Top R. R.	2,719	138,969
*East Broad Top	1,758	55,123
Clearfield Region, Pa.		
*Snow Shoe	1,076	23,823
*Tyrone and Clearfield	23,837	1,109,663
Allegheny Region, Pa.		
*Pennsylvania R. R	4,448	178,687
Pittsburg Region, Pa.		
*West Penn R. R.	3,131	160,684
*Southwest Penn. R. R.	381	22,310
*Penn & Westmoreland gas coal, Pa. R. R.	17,528	583,382
*Pennsylvania R. R.	10,262	381,523

*For the week ending Nov. 14th.

The Production of Coke for the week ending Nov. 14th:

Tons of 2000 lbs.	Week.	Year.
West Penn. R. R.	1,781	75,853
Southwest Penn. R. R.	17,525	682,846
Penn. & Westmoreland Region, Pa. R. R.	2,022	66,306
Pittsburg, Penn. R. R.	2,518	101,303
Penn. R. R. (Allegheny Region)		12
Total	23,846	926,323

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Dec. 6, 1878.

Anthracite.

There has been a moderate business doing, but trade has been greatly disturbed by the uncertainty that did exist as to the quantity of coal that would be allotted for the balance of December, and the uncertainty that still exists as to the probability of forming a combination. Prices have been quite irregular, and stocks are said to be accumulating. The mild weather that has ruled to within a day or two past has very materially reduced the consumption, but the colder weather since has given some encouragement to the hope that we are to have some severe weather yet this winter, and it is not yet too late to have an average cold season.

Yesterday the Board of Control met in this city, and, as we predicted several weeks past, increased the allotment for December 1,000,000 tons, thereby making the total allotment for the year 18,000,000 tons. The Philadelphia and Reading Railroad Company was the strongest advocate of this increase, and although it will, without question, find no difficulty in moving its proportion of the allotment, yet most of the other companies, provided they mine their proportions, will have to carry the coal, thereby increasing the stocks to such an extent that the New York market must be in a very demoralized condition before the end of the year.

J. H. Swoyer, chairman of the Lehigh committee, addressed a communication to Messrs. Gowen and Dickson, the Board of Control committee on combination for 1879, stating the action of the Lehigh operators at their meeting November 26th, to which Messrs. Gowen and Dickson replied as follows:

NEW YORK, Dec. 5, 1878.

J. H. Swoyer, Esq.:

DEAR SIR: We have to acknowledge the receipt of your favor of the 27th ult. which we have deferred answering until we could have a full conference with those whom we represent, and having had such conference to-day, we are authorized to reply to you as follows:

That any arrangement for the year 1879 should be concluded and agreed upon prior to the end of the presen

year, and that we are ready and willing to meet your committee at any time and place you may name prior to December 27th, provided that you have proper authority to represent the Lehigh Valley Coal Company, as well as the other Lehigh Valley operators.

Very respectfully,
THOMAS DICKSON,
FRANKLIN B. GOWEN.

In the event of the Lehigh Valley Coal Co. not giving authority to the Lehigh Committee to act for it previous to the 27th inst., the present arrangement will be permitted to expire by limitation.

The Delaware and Hudson Canal Company's directors have

Resolved, That this board unanimously approve of the decision of the President, not to make any further concessions in order to secure a continuance of the Association of Coal Companies for the year 1879.

After this, we can not see where a concession of any importance is to come from, and unless the present demands of the Lehigh Valley Railroad Company should be withdrawn, we do not see how it is possible to accomplish any thing. The outlook for a combination for 1879 is certainly darker than at any previous time, yet there are those who are giving the matter a great deal of attention who speak confidently with the belief that some compromise will be effected. For ourselves, we believe nothing will be done, and the trade will be allowed next year to follow its natural course, untrammeled by the artificial restrictions and unwholesome doctoring it has had to struggle with for some years past.

There is every indication that the Erie Railway's plans for pushing its business, irrespective of the other companies, will prove equal to several additional straws on the already overloaded combination programme.

The combination is now practically dead, and it will require the strongest kind of galvanic current to bring back some of the semblance of life into its corpse.

The production of anthracite coal last week was 527,962 tons, as against 530,569 tons the previous week, and 513,135 tons the corresponding week of 1877. The total production from January 1st to November 30th was 15,858,293 tons, as compared with 18,347,118 tons for the like period of last year, showing a falling off this year of 2,488,825 tons.

Bituminous.

Nothing of importance can be looked for at this season of the year, the only business expected being for cargo lots, all large contracts having been made earlier in the season, and most of them being filled now. Most of the companies shipping by the Chesapeake and Ohio Canal have stopped sending coal by that route, and this week will probably finish the season. The plans for the new outlet from the Cumberland field to the canal are receiving great attention, and no doubt this important enterprise will soon assume a tangible form.

The improving condition of manufacturing industry on the line of the Pennsylvania Railroad furnishes a steady trade to the Clearfield region.

New York.

Wholesale Prices of Anthracite Coal for December Delivery f. o. b. at Tide Water Shipping Ports, per ton of 2240 lbs.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
WYOMING COAL.	$	$	$	$	$	$
Lackawana, at Weehawken	3 60	3 60	3 65	3 80	4 20	3 65
*Pittston, at Newburg	.....	3 30	3 30	3 30	3 85	3 40
L. Val. Coal Co., at Amboy	.....	.....	.....	.....	.....	.....
Wilkes-Barre at Pt. Johnson	3 35	3 35	3 40	3 45	3 90	3 30
Plymouth Red Ash at Port Johnson	.....	.....	3 40	3 45	4 00	3 30
Swoyers at Eliz. Pt. or S.A.	3 60	3 60	3 60	3 75	4 20	3 60
LEHIGH COAL.						
L. V. Coal Co., at P. Amboy.	4 10	....	3 90	3 90	4 10	3 50
Cross Creek, at Port John.	4 00	3 90	3 90	3 90	4 20	3 60
Buck Mount. Vein at Elizabeth Port or S. A.	4 25	4 00	4 05	4 25	4 25	3 60
SCHUYLKILL COAL						
At Pt. Richmond, Phila.						
Hard White Ash	3 50	3 50	3 50	3 55	3 95	3 40
Free-burning W. Ash	.....	.....	3 40	3 50	3 95	3 30
Schuylkill Red Ash	.....	.....	.....	3 75	4 00	3 30
Lorberry	.....	.....	3 80	3 95	4 00	3 40
Lykens Valley Vein	.....	.....	3 80	3 95	4 00	3 60
†*Alongside in N.Y. Harbor.*						
Hard White Ash	4 20	4 20	4 20	4 20	4 40	3 80
Free-burning W. Ash	.....	.....	3 90	4 05	4 40	3 80
Schuylkill Red Ash	.....	.....	.....	4 35	4 50	3 90
Lorberry	.....	.....	.....	4 60	4 60	4 25
Lykens Valley Vein	.....	.....	4 60	4 70	4 70	4 35

* Forty cents per ton additional for delivery in New York.

† On coal delivered f. o. b. at the Philadelphia and Reading Coal and Iron Co.'s Wharf at Williamsburg, the current rate of harbor freight will be allowed from the prices are given.

Wholesale Prices of Bituminous Coal.

DOMESTIC GAS COALS.

Per ton of 2240 lb.	At the Shipping Ports.	Along side in New York.
Westmoreland and Penn	$4.25	.....
At Greenwich, Philadelphia	.....	$5.50
At S. Amboy	5.00	5 50
Kanawha at Richmond	4.10	5.40
Red Bank Cannel, Pa., at Philadelphia	8.00	8.50
Youghiogheny, Waverly Co., at Balt	4.00	5.65
Despard, West Va.	4.50	6.00
Murphy Run, West Va., at Baltimore	3.75	5.85
Fairmount, West Va., " "	3 75	5.70
Newburg Orrel. Md. " "	3.75	6.00
Cannelton Cannel, West Va	....	10.00
" Splint " at Richmond.	6.00	7.00
" Gas Coal at Richmond	4.00	5.65
Peytona Cannel, W. Va., at Richmond	....	10.00

MANUFACTURING AND STEAM COALS.

Cumberland at Georgetown and Alexandria	2.75@2.90	4.35@4.50
Cumberland, at Baltimore	2.90@3.00	4.35@4.50
Cl'rfi'd "Eureka" and "Franklin."		
At mines	0.75	....
At Baltimore	3.25	4.50
At Philadelphia	3.25	4.50

FOREIGN GAS COALS.

	Sterling.	Am. cur'ncy
Newcastle, at Newcastle-on-Tyne	7s.6d.	$2 50@ $3.50
Liv. House Orrel, at Liv.	25s.	13.00
Ince Hall Cannel "	35s.6d.	18.00
" Gas Cannel "	25s.6d.	10 00@ 10.50
Scotch Gas Cannel, at Glasgow, nominal	25s.	7.50
	Gold.	
Bl'k House, at Cow Bay, N.S.	$1.75	$4.50
Caledonia, at Pt. Caledonia	1.50	4.25
Glace Bay at Glace Bay	1.50	4.00
Lingan, at Lingan Bay	1.50	....
Intern'l Mines, at Sydney	1.75	4.50
Pictou, Vale Mines, at Pictou	2.00	4.70

Retail Prices.

Per ton of 2000 lbs.

Anthracite.

	G. & Egg.	Stove.	Chest.
Pittston coal delivered	$5.00	$5.00	$5.00
Lack. coal, delivered below 59th St.	4.50	4.75	4.50

Bituminous.

Liv. House Orrel	$18.00	American Orrel	$11.00
Liv. House Cannel	18.00	Red Bank Cannel	7.00
Am. "	11.00	Cumberland	9.00
Ca'n'lt'n Bl'k, or splint.	10.00		

Baltimore. Dec. 3, 1878.

[Specially reported.]

Wholesale Prices per ton of 2240 lbs.

In cars at Depot N. C. R. R.

HARD WHITE ASH, FREE-BURNING WHITE ASH, SHAMOKIN, ETC.

Lump and Steamboat	$4.05	Stove	$4.55
Broken	4.20	Chestnut	4.05
Egg	4.30		

LYKENS VALLEY RED ASH.

Broken	$4.40	Stove	$4.70
Egg	4.55	Chestnut	4.15

By cargo afloat, 15c. *less* per ton than car prices. To trade from wharf or yard, 50c. per ton *above* car prices.

Chicago. Dec. 3, 1878.

[Specially reported by Messrs. RENO & LITTLE.]

The following are the present prices of coal per ton of 2000 lbs. delivered:

Retail prices of coal delivered per ton of 2000 lbs

Lackawanna Stove	$6.25	Erie and Brier Hill	$5.00
" Chestnut	6.00	Wilm'gton & Ill.	$3 00@3.50
" Grate	6.00	Blossburg	5.50@6.00
" Egg	6.00	Piedmont	7.00

Stocks of all kinds of coal liberal. Trade dull.

Cincinnati. Dec. 3, 1878.

[Specially reported by the Consolidated Coal & Mining Co.]

Per bushel of 72 lbs.

	Retail delivered.	Wholesale afloat.
Youghioghney	11c.	7½c.
Camden	9c.	5½c
Cannel	17@18c.	13c

Anthracite, delivered, $7@$8 per ton of 2,000 lbs.

Hamilton, Ont. Dec. 3, 1878.

[Specially reported by H BARNARD.]

Retail prices delivered per ton of 2000 lbs.

cr. or Wilkes-B. Grate	$4.75	Lehigh Lump	$6.00
" " Egg	4.75	Brier Hill	5.00
" " Stove	5.25	Massillon	4.50
" " Nut	4.75	Smithing	5.50

From wharf or yard to the trade, 50c. per ton additional. Afloat by cargo per canal barge, 15c. per ton less than in cars at depot.

Indianapolis. Dec. 3, 1878.

[Specially reported by Messrs. COBB & BRANHAM.]

WHOLESALE BITUMINOUS.

On board cars, per ton of 200 lbs.

White River..None in market		Hocking Valley	4.20
Brazil Block	$2.10	Raymond City	3.40
Highland Grate	1.85	Youghiogheny	3.70
Indiana Cannel	3.65	Blossburg (smithing)	5.25
Peytona	5.70	Piedmont "	5.25

Per car, 12 tons.

Block coal, nut	$15.00	Block Slack	$12.00
Highland, "	14.00		

RETAIL BITUMINOUS.

Delivered per bushel of 70 lbs.

Raymond City	14c.	Block Nut, steam use	6c.
Brazil Block	10	" Slack, "	5
Highland Grate	9	Virginia Cannel	24
Block Nut, domestic use	10	Indiana Cannel	15
Highland Nut, " "	11	Youghiogheny	15
" " steam	8	Blossburg	24

GAS COKE.

Per bushel, measure containing 2888 cubic inches.

Retail, crushed	8c.	Wholesale, lump	6½c.
" lump	7	" crushed	7½

ANTHRACITE.

Per ton of 2000 lbs.

Wholesale on Cars.		*Retail delivered.*	
Wilkes-Barre, all sizes	$5.50	Wilkes-Barre, all sizes	$6.50
Lackawanna, "	5.75	Lackawanna, "	6.50
Lehigh "	6.75	Lehigh, "	7.50

Louisville. Dec. 3, 1878.

[Specially reported by Messrs. BYRNE & SPEED.]

The demand at present is very good, in the city and on railroads.

Wholesale per bushel of 72 lbs.

Pittsburg	6c.	Kentucky, in river	5½c.
Raymond City	6	Kentucky, on cars	6

Retail.

Pittsburg	10c.	City made Coke	7c.
Raymond City	9	Gas Coke	8c.
Kentucky	8	Cannel Coal	17
Hard and soft Coke	8	Anthracite, per ton	$7 00

Montreal. Dec. 3, 1878.

[Specially reported by Messrs. ROBERT C. ADAMS & Co.]

Wholesale per 2240 lbs.

Scotch Steam	$4.50	Cape Breton Steam	$4.00
Pictou	4.25	Newcastle Smith's	5.00

Anthracite at retail, per 2000 lbs. delivered.

Stove	$6.50	Chestnut	$6.00
Egg	6.25		

Milwaukee. Nov. 27, 1878.

[Specially reported by Messrs. R. P. ELMORE & Co.]

Prices on coal remain as before, with the exception of Lehigh lump, $7.50; Lackawanna (all sizes), $6.50, and Briar Hill, $5.50 per ton.

Retail price per ton of 2000 lbs.

Lehigh prepared, chippings	@$7.00
" " lump	@ 7.50
Lackawanna prepared (all sizes)	@ 6.50
Briar Hill	@ 5.50
Steam cokes	$3.75@ 4.75

New Orleans. Dec. 2, 1878.

[Specially reported by Messrs. C. A. MILTENBERGER & Co.

The coal market is weak, with but a limited demand for the season. The importation of foreign coals by ocean steamers, for use as fuel, has materially affected the consumption, and the large stock on hand, with more *en route*, has caused a general depression in the trade. Coal on hand December 1st, 1878: Pittsburg coal, 134 boats and 1 barge; St. Bernard coal, 2 boats and 1 barge. Consumption during November: Pittsburg coal, 25 boats and 2 barges; St. Bernard coal, 2 boats and 1 barge. Arrivals during November: 8 boats Pittsburg, from Baton Rouge; 5 boats Pittsburg, from Bayou Sara.

PITTSBURG COAL.

At wholesale (by boat-load)	27@30c.	per bbl. of	180 lbs.
To steamboats	45c.	"	"
" manufactories	45c.	"	"
" families	50c.	"	"

In hhds. (for shipment) $5.00 per hhd from 5 to 6 bbls.

ANTHRACITE COAL

Per ton of 2000 lbs.

At wholesale	$6.00 to $7.00
To families etc.	8 50 to 9.00

ST. BERNARD (KY.) COAL.

To steamboats	40c.	per bbl. of	180 lbs.
" families	45c.	"	"
Virginia cannel at retail	85c.	"	"

Philadelphia. Dec. 5, 1878.

The trade here is dull and prices declining. The uncertainty about the management of the coal trade for 1879 causes great prostration in the business, and the action of the Board of Control to-day will certainly not bring any relief. That body is certainly governed by motives which prevent its regulating the supply according to the demand. The action it has taken repeatedly this year is a sure indication of it. The buyers who placed confidence in their judgment are severely punished for it, and the method lately adopted to give extra quotas has destroyed confidence entirely. No doubt the greatest sacrifices had to be made this year to carry out the programme successfully, and it is beyond comprehension, that after so much had been borne, all the good it has produced for the future should be thrown away.

Vessels are becoming more plenty as the orders are scarcer, and freight declining to $1.75 to Boston. Light-draught vessels, however, continue quite scarce, and rates much stiffer for them than for the heavy-draught ones.

Pittston, Pa. Dec. 3, 1878.

Pennsylvania Coal Company's Coal in Yard.

Retail per ton of 2,000 lb.

Lump, Egg, and Stove	$2 25
Chestnut	2 00
Pea	1 00

Delivered, 50 cents per ton additional.

Richmond. Dec. 3, 1878.

[Specially reported by S. H. HAWES, Dealer in Coal.]

Per ton of 2240 lbs. f.o.b.

Kanawha Cannel	$9.00	New River Bituminous	$3.30
Coalburg Splint	4.50	Clover Hill Coal	2.50
Lewiston	4.50	Norwood Gas and	
Kanawha Gas Coal	4.10	Steam Coal	2.70

Sandusky. Dec. 4, 1878.

[Specially reported by Messrs. BLACK & CLARKE, Agents Con. Coal and Mining Company.]

Per ton of 2000 lbs.

ANTHRACITE.

	Grate.	Egg.	Stove.	Chest
Lehigh	$6 00	$6 00	$6 25	$5 75
Wilkes-Barre	4 80	4 90	5 15	4 65
Pittston	4 80	4 90	5 15	4 65

BITUMINOUS.

Massillon	$2 85	Straitsville	$2 00
Hocking Valley	2 50	Piedmont	1 54

Prices retailed delivered 50c.@75c. above car prices.

San Francisco. Nov. 29, 1878.

COAL.—Imports from January 1st to November 1st, 1878:

	Tons.		Tons.
Anthracite	22,695	English	36,450
Australian	109,883	Mt. Diablo	88,288
Coos Bay	26,048	Rocky Mountain	371
Cumberland	4,954	Ione	665
Bellingham Bay	2,820	Carbondale	3,125
Vancouver Island	108,592	Ounalaska	450
Seattle	93,355		

The arrivals during the week have been few and unimportant, causing increased strength to holders. The Arcata, from Coos Bay, had 350 tons; the Shirley, from British Columbia, 1500 tons Wellington. We quote: Australian Steam, $6.50; Wallsend, $7@$7.25.

St. Louis. Dec. 3, 1878.

Reported by JAMES J. SYLVESTER, Secretary of the Anthracite Coal Association.]

Retail prices, delivered. Ton of 2000 lbs.

ANTHRACITE.

	Per ton.		Per ton.
Lackawanna	$7.50@	Lehigh	$8.50@
Wilkes-Barre	7.50@	Connells. Coke	6.00@
Schuylkill	7.50@	Blossburg	7.75@

Dec. 3, 1878.

[Specially reported by Messrs. LEWIS P. HARVEY & Co.]

BITUMINOUS.

Big Muddy	$3.65	Piedmont	$7.25
Indiana Block	3.25	Pittsburg	4.35
Illinois Coals	2.25@2.50	Peytona	7.50
Blossburg	7.75	Lehigh Val. Ant.	7.50@8.00

FREIGHTS.

Coastwise Freights.

Per ton of 2240 lbs.

Representing the latest actual charters to Dec. 5th, 1878.

PORTS.	From Philadelphia.	From Baltimore.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Alexandria	97½@1.00		
Albany			
Allyn's Point			75
Annapolis	60		
Augusta		1.90	
Baltimore	50†@60		
Bangor, Me		2.00	1.50
Barnstable			
Bath, Me		1.75	
Boston, Mass	1.75@2.00	1.75	1.50
Braintree			
Bridgeport, Conn.	1.15	1.30	65
Bristol, R. I			75
Brooklyn	85		
Cambridge, Mass.	2.21		1.50
Charleston	1.15		
Chelsea	2.15		
Charlestown	2.00§		1.50
Camo idgeport	2.00§		1.50
Danversport	2.00		1.75
East Cambridge	2.00		1.50
East Boston			1.50
Eliz'b'th City, N.C			
Fall River	1.50	1.30	75
Georgetown	1.00		
Hackensack	1.16		
Halifax			1.75
Hartford		1.30	
Hingham	2.30†		1.50†
Hoboken			
Hudson			
Jersey City			
Lynn	2.30		1.50†
Medford	2.27@2.25†		
Middletown			
Nantucket, Mass.			
Newbern	85		
New Bedford	1.50@1.75	1.35	85
Newburyport		1.90	1.65
New Haven	85	1.30	65
New London	1.25†	1.30	70
Newport	1.70		75
New Rochelle	85		
New York	85@95	1.30	
Newark	95		
New Orleans			
Norfolk, Va	70@75		
Norwich	1.75	1.45	75
Norwalk, Conn		1.45	
Pawtucket	1.75‡@1.80	1.85	85
Petersburg	1.10		
Philadelphia			
Port Eades			2.50
Port Royal			
Portland	1.55	1.75	1.50
Portsmouth, Va			
Portsmouth, N.H.	1.90	1.90	1.65
Providence	1.50@1.62	1.30	75
Richmond, Va	1.00		
Saco			2.00
Sag Harbor	1.75		
Salem, Mass		1.85	1.50
Savannah	1.31		
Saybrook			
Somerset	1.50		75
Southport	85		
Stamford	1.00		
St. John, N. B			1.00‡
Trenton			
Troy			70
Wareham		1.85	
Washington	1.00		
Williamsburg	85		

* And discharging and towing. † And discharging. ‡ And towing. § 3 cents per bridge extra.

Lake Freights on Coal and Iron Ore.

Representing the latest actual charters up to Dec. 3d.

From	To	Rate per ton.	From	To	Rate per ton.
Bay City	Milwauk'e.	.....	Buffalo	Chicago	50
Buffalo	Erie	.....	Chicago	Milwaukee	25
"	Cleveland	20	"	Green Bay	30-35
"	Chicago	60	Cleveland	Chicago	40-45
"	Cleveland	20	"	Milwaukee	40
"	Ashtabula	20	Detroit	Chicago	†1.50
"	Sandusky	30	Erie	Chicago	.....
"	Bay City	50	Fairhaven	"	70
"	Saginaw	60	"	Milwaukee	70
"	Marquette	*	Oswego	Chicago	70
"	Escanaba	60	"	Milwaukee	.....
"	Green Bay	60	"	Detroit	45
"	Racine	60	Sandusky	Toronto	.....
"	Milwaukee	60	Toledo	Milwaukee	50

* Lake shipments (Nov. 9) made at 1.00. † Pig-iron.

Ocean Freights.

Ocean Freights on coal, iron, etc., per ton of 2000 lbs. to and from foreign and domestic ports, for four weeks ending Dec. 3d, 1878, are given below.

DATE.	From	To	Cargo.	R'te
Nov. 1	Perth Amboy	Port Royal	RR. iron	1.75
" 1	Booth Bay	Savannah	*	1.75
" 2	Philadelphia	Somerset	Iron	1.55
" 5	Buffalo	Detroit	Pig-iron	40
" 5	Buffalo	Detroit	Salt	4
" 5	Buffalo	Toledo	Pig-iron	40
" 8	Wood's Hole	Pensacola	Guano	1.50
" 18	New York	Havana	Coal	1.50
" 18	New York	Baltimore	Iron	90
" 22	Booth Bay	Savannah	*	1.75
" 22	Boston	Alexandria	Salt	8
" 22	Curaçoa	Boston	Salt	9
" 23	Boston	New York	Salt	3
" 25	Perth Amboy	Wilmingt'n, N.C	RR. iron	2.00
" 25	Dutchess Junction	Richmond	Pig-iron	1.25
" 25	New York	Georgeto'n, D.C	Guano	1.50
" 26	San Francisco	Departure Bay	Coal	3.00
Dec. 3	New Haven	Philadelphia	Rails	1.50
" 3	Elizabethport	Richmond	Pig-iron	80
" 3	New York	Port Royal	*	1.75

* Phosphate.

Railroad Freights on Iron.—From and after Friday last, until further notice, the rates on iron, in car-loads and less, over the Pennsylvania Railroad from Pittsburg, will be as follows: To Baltimore, 18c.; to Philadelphia, 19c.; to New York, Boston and Providence, 26c. Rates on other fourth-class freights will remain at the same figures as recently adopted.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Dec. 6, 1878.

American Pig.—Several hundred tons of Lehigh iron are reported to have sold on the basis of $16.50 per ton, while the Thomas Company reports a small business upon the basis of $18 per ton. There is too much iron in second hands, sheriffs' hands, and under hypothecation to enable the market to advance, were there not also the requirements of furnace companies financially weak to be supplied. It is reported that 2000 tons of Jagger iron at Albany will soon be sold at auction, and there is also a rumor that considerable Allentown iron now stored will soon come on the market. The present indications favor active competition in coal next year, in which event some advantage will come to the iron-workers. We quote No. 1 foundry at $16@$18; No 2, $15@$17; and forge, $14@$15.

Scotch Pig.—There is but a small business doing. We quote Eglinton at $21.75; Coltness, $23@$23.50; and Glengarnock, $22.50@$23.

Messrs. John E. Swan & Brothers, of Glasgow, under date of Nov. 22d, reported 88 furnaces in blast, as against 89 a year previous. The quantity of pig-iron in Connal & Co.'s stores was 199,533 tons, showing a decrease of 265 tons for the week. The shipments to Nov. 16th showed a falling off of 52,112 tons, as compared with those to the same date in 1877. The imports of Middlesbrough pig-iron in the same comparison show a decrease of 8488 tons. Warrants ⅜ No. 1 and ⅝ No. 3, g. m. b.) were quoted at 42s. 10d. The leading brands of No. 1 iron were quoted as follows: Gartsherrie, 50s.; Coltness, 51s.; Summerlee, 48s. 6d.; Langloan, 52s.; Glengarnock, 48s.; and Eglinton, 43s. 6d. Middlesbrough iron, f. o. b., Tees, was quoted as follows: No. 1, foundry, 40s. 3d.; No. 2, 38s. 3d.; No. 3, 36s. 9d.; No. 4, 36s. 3d.; and No. 4 forge, 36s. 3d. Bessemer iron, f. o. b., Barrow, was quoted as follows: No. 1, 65s.; No. 2, 62s. 6d.; and No. 3, 60s.

Rails.—Sales of about 10,000 tons of steel rails are reported for this week. There is still considerable inquiry, and a very large business is expected for next year. Iron rails are quiet, although a late sale of 5000 tons is reported. We quote steel rails, at Eastern mills, at $41@$42, and iron rails at $32@$36.

John H. Austin & Co., of London, under date of November 20th, quote rails as follows, the prices being nominal, and f. o. b. English ports. Iron rails, 50 to 60 lbs. per yard, £4 12s. 6d. per ton. Steel rails, same weight, £5 10s.

Old Rails.—1500 tons have been sold during the week at $19, Sound port. We quote at $19@$20.

Wrought Scrap.—400 tons have sold at $21@$21.50. The price now asked is $22.

Baltimore. Dec. 2, 1878.

[Specially reported by Messrs. R. C. HOFFMAN & Co.]

The iron market remains unchanged, with fair demand.

Balt. Char.	$26.00@$28.00	M. & White	$13.00@$14.00
Va. "	26.00@ 28.00	C'l'C.B.Blooms	50.00@ 52.00
Anth. No. 1	19.00@ 20.00	" " Billetts	52.00@ 55.00
" " 2	18.00@ 19.00	Refi'd Blooms	43.00@ 45.00
" " 3	16.00@ 17.00		

Buffalo. Dec. 3, 1878.

[Specially reported by Messrs. PALEN & BURNS.]

Prices per gross ton delivered on cars at Buffalo:

	4 mos.
No. 1 Foundry	$18.00
No. 2 "	17.00
No. 3 Forge	16.00
American Scotch A 1	19.00
" " B 1	17.00
" " No. 2	16.50
" " No. 3	.....
Best selected Connellsville coke, per net ton	4.75

Chattanooga. Dec. 3, 1878.

[Specially reported by J. F. JAMES, Dealer in Iron & Metals.]

Tenn., Ala. & Ga. Charcoal, No. 1 Foundry	$16 00@$17 00		
Tenn., Ala. & Ga. Charcoal, No. 2 Foundry	15 00@ 16 00		
Tenn., Ala. & Ga. Charcoal, Gray Forge	13 00@ 15 00		
Tenn., Ala. & Ga. Coke, No. 1 Foundry	18 00@ 19 00		
Tenn., Ala. & Ga. Coke No 2 Foundry	16 00@ 17 00		
Tenn., Ala. & Ga. Coke, Gray Forge	14 00@ 15 00		
Charcoal or Coke, white and mottled	13 00@		
Old rails	$18 00@$19 00	Wr'ght scrap, No. 2	$11 00
Old car wh'ls	16 00@ 17 00	Cast scrap	10 00
Wr'ght scrap, No. 1	16 00	Muck bar	30 00@ 32 00

IRON ORES.

Red hematite or fossiliferous f. o. c. at mines, about 55 per cent metallic iron	$1.25
Brown hematite about 55 per cent metallic iron	1.75

Cincinnati. Dec. 3, 1878.

[Specially reported by Messrs. TRABER & AUBERY, Commission Merchants for the sale of pig iron, blooms, ore, etc.]

The past week has developed a movement in mill irons at current prices, and considerable lots have been placed. Foundry irons are in good demand at quotations, which we continue:

CHARCOAL.

H'n'g Rock No. 1 Foundry & B 1	$21 00@$22 50	—4 mos.
" No. 2 "	20 00@ 21 00	—4 mos.
" Soft Silver Gray	18 00@ 19 00	—4 mos.
" Mill	18 00@ 19 00	—4 mos.
Tennessee No. 1 Foundry	20 00@	—4 mos.
" No. 2 "	19 00@	—4 mos.
" Mill	18 00@	—4 mos.

STONE COAL.

Ohio No. 1 Foundry	$16 00@ 16 50	—4 mos.
" No. 2 "	15 00@	—4 mos.
" No. 3 "	14 00@	—4 mos.
" No. 4 "	13 00@	—4 mos.
" Mill	16 00@	—4 mos.

COKE.

Ohio & W. Va. No. 1 Foundry	18 50@ 19 00	—4 mos.
" " No. 2 "	17 50@	—4 mos.
" " Stove	16 00@	—4 mos.
" " Mill	17 00@	—4 mos.

CAR-WHEEL

H'n'g R., C. B	Hecla, Vesuvius, Etna, Buckhorn, Jefferson.	$30 00@ 35 00—4 mos.
Maryland, "	Cedar Point	35 00@ ..... —4 mos
Missouri, "	Maramec	28 00@ ... —4 mos

BLOOMS.

Charcoal	$45 00@$50 00—cash.

SCRAP IRON.

Cast	40c. @ 45c.—cash
Wrought	62½c.@ $1.00—cash

Cleveland. Dec. 3, 1878.

[Specially reported by Messrs. C. E. BINGHAM & Co.]

No. 1 Red Specular	$6.00 per ton cash.
No. 2 " "	5.00 " "
Red Hematite	4.25 " "
Lake Champlain ore	5.25 " "

FOUNDRY IRON.

No. 1 L. S. Charcoal	$22 00	Am. S., No. 1, Ch. Val.	$20 00
No. 2 " "	21 00	" " B—1, " "	18 00
No. 1 Anthracite	20 00	" " No. 2 " "	18 00
No. 2 "	19 00	No. 1, Massillon	19 00
No. 1 Bituminous	20 00	B—1, "	17 00
No. 2 "	18 00	No. 2, "	16 00

CAR-WHEEL AND MALLEABLE IRON.

No. 3, L. S. Charcoal	$23 00	Nos. 5 & 6, L. S. Char.	$23 00
No 4, " "	23 00		

BESSEMER IRON.

Nos. 1 & 2, L. S. Char	$23 00

FORGE IRON.

No. 1, Gray	$18 00	White and Mottled	$16 00

Columbus, O. Dec. 3, 1878.

[Specially reported by Messrs. KING, GILBERT & WARNER, Dealers in Pig Iron and Ores.]

The market presents nothing particularly new. The demand continues moderately active and prices unchanged. It seems to be the general impression that after the new year the trade will be in a healthier condition. Pig-iron, at present prices, seems to be regarded as good property. We quote as follows:

FOUNDRY IRONS

No. 1 Hanging Rock Charcoal	$22.00@$22.50
No. 2 " " "	21.00@ 21.50
No. 1 Hocking Valley soft and strong from pure limestone ores	18.25@ 18.75
No. 2 Hocking Valley soft and strong from pure limestone ores	17.25@ 17.75
No. 1 American Scotch	18.00@ 18.50
No. 1 Moxahala	18.00@ 18.50
No. 2 "	17.00@ 17.50
No. 1 Shawnee	18.00@ 18.50
No. 1 Silver Gray	16.50@ 17.00
No. 2 " "	15.50@ 16.50

MILL IRONS.

Gray neutral	16.00@ 16.50
Mottled and white neutral	15.00@ 15.50
Gray cold short	15.50@ 16.00
Mottled and white cold short	14.50@ 15.00

Louisville. Dec. 3, 1878.

[Specially reported by Messrs. GEORGE H. HULL & Co.]

The demand is falling off somewhat, in consequence of the near approach to the new year, when manufacturers take their account of stock. Prices are as firm as ever, and we anticipate no weakening in this respect but, on the contrary, all the indications are that they will be higher in January and February.

The usual time, four months, is allowed on quotations below:

FOUNDRY IRONS.

	No. 1.	No. 2.
Hanging Rock Charcoal	$21 00@$22 00	$19 00@$20 00
Southern Charcoal	18 00@ 18 50	16 50@ 17 00
H'n'g Rock, Stc'l & Coke	19 00@ 20 00	18 00@ 18 50
Southern Stonecoal & Coke	18 50@ 19 00	17 00@ 17 50

"Amer. Scotch"... $18@$19 | Silver Gray... $16@$17.00

MILL IRONS.

No. 1 Charcoal, Cold-short & Neutral	$16 50@$17 00
No. 1 Stc'l & Coke, Cold-short & Neutral	16 50@ 17 00
No. 2 Stc'l & Coke, Cold-short & Neutral	15 50@ 16 00
No. 1 Missouri and Indiana, Red-short	20 00@ 21 00
White & Mottled, Cold-short & Neutral	14 50@ 15 00

CAR-WHEEL AND MALLEABLE IRONS.

Hanging Rock, Cold Blast	$29 00@$33 00
Alabama and Georgia, Cold Blast	28 00@ 29 00
Kentucky, Cold Blast	25 00@ 30 00

Milwaukee. Dec. 3, 1878.

[Specially reported by Messrs. R. P. ELMORE & Co.]

CHARCOAL IRON.

No. 1 Lake Superior per gross ton	$23 00—4 mos.
" 2 " " " "	22 00—4 mos.

ANTHRACITE IRON.

No. 1 Anthracite per gross ton	23 00—4 mos.
" 2 " " "	22 00—4 mos.

STONE COAL AND COKE.

Warner's Am Sc'th (Bk. Band, per ton	$24 00@ ....—4 mos
Soft Silvery per ton	21 00@ ....—4 mos
Ohio Stone Coal	22 00@ ..—4 mos

CAR WHEEL.

Lake Superior ores per ton	$24 00@25 00—4 mos

Pittsburg. Dec. 3, 1878.

[Specially reported by A. H. CHILDS.]

The metal market is quiet, and sales, during the past week or ten days, have been very light. Prices are nominally unchanged, although on some of the poorer brands concessions would be necessary to effect sales.

	4 mos.		4 mos.
No. 1 F'dry	$19.00@$20.00	M. & White	$15.00@$16.00
No. 2 "	18.00@ 19.00	Hot Blast Ch.	20.00@ 23.00
Gray Forge	16.50@ 19.00	Cold Blast W.	35.00@ 37.00

Richmond, Va. Dec. 3, 1878.

[Specially reported by ASA SNYDER, Esq.]

Amer. Scotch Pig Iron	$21.50@$22.50
Anthracite " " No. 1	19.00@ 20.00
" " " No. 2	18.50@ 19.00
" " " No. 3	17.00@ 18.00
" " Mottled	15.00@ 16.00
Coke " No. 1	19.00@ 20.00
" " No. 2	18.00@ 19.00
Va. Cold Blast Charcoal Pig Iron, cold short	19.00@ 22.00
" " " " " neutral	27.00@ 28.00
" Warm " " " "cold short	18.00@ 20.00
" " " " " mill	17 00@ 18 00
Old Rails	17.00@ 18.00
Wrought scrap No. 1	16.00@ 17.00
Cast scrap—Machinery	15.00@ 16.00
Richmond Refined Bar Iron	2.00@ 2.10
Horse-shoes	4.00@ .....
Mule-shoes	5.00@ ..
Old Dominion nails (standard size)	2.25 keg.

Freight by sail to New York, $1.60 for 2240 lbs.

St. Louis. Dec. 2, 1878.

[Specially reported by Messrs. SPOONER & COLLINS, Commission Agents for all kinds of Iron.]

Pig-iron business remains about the same. No special change in prices. Cheap-priced pig-irons are becoming scarce. Prospects for better prices good. Old rails very scarce and firm at quotations.

COLD BLAST CHARCOAL—ALL NUMBERS.

Hanging Rock	$23@$25	Assorted Bar Iron	$1.95 rates.
Tennessee	22@ 23	No. 1 Wr'ght Scrap, 90c. cwt.	
Kentucky	22@ 23	Heavy cast "	65c. "
Missouri	22@ 23	Light " "	40c. "
Georgia	22@ 23	Old rails	$19 00@$21 00
Alabama	22@ 23	Old carwheels	17 00@ 18 00

	No. 1.	No. 2.	Mill.	White and Mottl'd
Missouri stone coal	$21 00	$20 00	$19 00	$17 00
" charcoal	20 00	19 00	18 00	.....
Tennessee charcoal	20 00	18 50	17 50	.....
Tenn. coke very soft and strong	20 00	19 00	17 00	16 00
Hanging Rock charcoal	22 00	20 00	19 00	.....
" " cold short	23 00	21 00	20 00	.....
	ExNo.1	No. 1.	BNo.1.	No. 2.
Alice Hanging Rock coke	$22 00	$21 00	$19 50	$19 00
Moxahala Black Band ores	21 00	20 00	19 50	18 00

METALS

NEW YORK, Friday Evening, Dec. 6, 1878.

There has been a fair business done during the past week, although prices have been somewhat lower on several articles. The approach of the close of the year must bring with it a quietness.

RECEIPTS OF METALS AT NEW YORK FOR THE FOUR WEEKS ENDING DECEMBER 5TH AND YEAR FROM JANUARY 1ST, 1878.

	Nov. 14.	Nov. 21.	Nov. 28.	Dec. 5.	Year from Jan. 1
Copper, bbls	466	405	391	276	22,571
Copper, boxes	....	....	....	.....	113
Copper, cakes	571	192	160	473	17,967
Lead, pigs	4,167	7,624	3,935	10,439	282,488
Spelter, pieces	....	1,266	1,381	2,487	44,832
Quicksilver, flasks	....	....	....	...	1,221

Gold Coin.—The price of gold has ranged during the week under review from 100⅛ to 100⅛, and closed at 100⅛.

Copper.—There has been a better business during the past week, but at the end prices are weaker, although the nominal quotation is 15⅞@16c.

Tin.—A sale of 75 tons of Straits, December arrival, is reported at 15¾c., since when there has been a decline, and about 30 tons sold at 14⅞@15c. The market at present, for spot lots, is 15⅝@15⅞c., according to quality. L. & F. is quoted at 14⅞c.; Refined, 15⅛@15⅝c.; Banca, 19c. There has arrived, from Singapore, 830 slabs. The quotation at Singapore is $19.50, while Straits in London is quoted today at £64 10s.

Tin Plates.—These are quiet, and unchanged in price. We quote as follows: "Charcoal, bright, ⅛ X., Melyn grade, $5.87½@$6, and Allaway grade, $5.75@$5.87½; charcoal ternes, Allaway grade, $5.25 @$5.37½; coke, bright, B. V. grade, $5.12½, and roofing, 14×20, $4.70."

Messrs. Robert Crooks & Co., of Liverpool, under date of November 21st, say of tin and terne plates:

"An important item of news has just transpired, to the effect that most if not all of the remaining charcoal-makers are likely to join in the short-time movement; if this is carried into effect, it will give strength to charcoals, which they at present lack, as the market shows no improvement upon our quotations of last week. Ternes are a shade better, but not quoted higher. Coke tins maintain their value, and it would be difficult to buy many at our quotations; market price is generally 3d. higher. Ternes can occasionally be met with at 13s. 6d. to 13s. 9d., but only in odd lots."

Lead.—A sale of 50 tons, to arrive in January, is reported at 3·95c. About 300 tons are reported at 3·95@4c. The closing price is 3·97½@4c. for ordinary, and 4⅛c. for refined.

The San Francisco *Commercial Herald* of November 29th says: "The Granada, for New York, carried 100,000 lbs. pig-lead."

Spelter and Zinc.—We note 100 tons of spelter sold at 4½c. The market is stronger all round at the close, the quotations being 4⅝@4¾c., according to brand, with 4½c. bid for any portion of 200 tons. Sheet zinc is dull and unchanged at 4½c.

Antimony.—There is but a small busines doing. Hallett's is quoted at 11¾c. and Cookson's at 12c.

Quicksilver.—The San Francisco *Commercial Herald* of November 29th says: "The market is without life or animation: the price is nominally 40c., but it can be bought for less. The Granada, hence for Panama, carried 100 flasks, *en route* for Valparaiso; also 6 flasks to Central America; the Zealandia, for Australia, carried 62 flasks. The Newbern, for Mexico, carried 17 flasks."

THE BULLION MARKET.

NEW YORK, Friday Evening, Dec. 6, 1878.

The market was steady in London until the awards of India Council bills at a decline of ⅛d. per rupee on Wednesday. This has been succeeded by another fall to-day on the increased disturbance of the English money market, owing to further failures of mercantile houses and rumors of a bank being in trouble. We quote the market here nominal at $1.10 per oz. for fine silver. London quotes 50½d. per oz. San Francisco quotes at 15 per cent discount.

DAILY RANGE OF SILVER IN LONDON AND NEW YORK, PER OZ.

DATE.	London Pence.	N. Y. Cents.	DATE.	London Pence.	N. Y. Cents.
Nov. 30	50 11-16	110⅛	Dec. 4.	50⅝	110¼
Dec. 2	50 11-16	110¼	Dec. 5.	50 9-16	110
Dec. 3	50 11-16	110¼	Dec. 6.	50½	110

Production of the Eureka (Nev.) District for Three Months Ending September 30th.—The Eureka *Leader* says: "During the quarter ending September 30th, the mines of this district yielded 28,514 tons of ore, the gross value of which was $1,187,154.86. The cost of extracting, transporting and reducing the same was $678,190.05, leaving a net value of $525,699.28. The bullion tax from this latter amount aggregated $10,513.98.

"Thirty producing mines are included in the Assessor's list, of which but eight contributed to the tax. These were the Alexandria, Banner, Eureka Con., El Dorado, Garrison, Richmond, Silver Connor, and Williams. There was extracted from the Eureka Con. 19,045 tons, of a gross value of $770,205 and a net yield of $420.179, the company paying a tax of $8403.59. The Richmond gave an output of 7677 tons; gross value, $315,446.63; net yield, $88,933.64; tax, $1778.67. Alexandria, 67½ tons; gross value, $6125; net value, $1608.77; tax, $32.18. Banner, 68½ tons; gross value, $5907.66; net value, $1,279.99; tax, $25.60. El Dorado, 46 tons; gross value, $4227.91; net value, $1688.28; tax, $33.37. Garrison, 227½ tons; gross value, $25,337.24; net value, $9254.28; tax, $185.08. Silver Connor, 40½ tons; gross value, $2011.82; net value, $112.49; tax, $2.24. Williams, 40 tons; gross value, $5920; net value, $2662.50; tax, $53.25. The Connolly yielded 302 tons, of a gross value of $1646.38; the Geddes & Bertrand, 21 tons, valued at $1062; Fourth of July, 76 tons, valued at $2420; Bald Eagle, 19 tons, valued at $1852.85; Bullwhacker, 33 tons, valued at $2116.06; Jackson, 17½ tons, valued at $774.36; Phenix, 692 tons, valued at $25,111.63; Williamsburg, 20 tons, valued at $352.23.

"The total yield of the district fell off considerably during the quarter, owing to the suspension of work in the K K Con. and other mines, and the extraction of low grade ore in the principal properties. The burning down of the Richmond furnaces and the continued closing of the K K and Phenix will have the same effect on the revenues for this quarter, and will, without doubt, bring the yield from the tax still lower. The Assessor's returns, however, show a healthy outlook, and there is no reason to believe that there will be any depression in our mining industries for an indefinite period."

BULLION SHIPMENTS.

We give below a statement showing the latest bullion shipments in addition to those announced in our issue of Nov. 30:

November 18	Indian Queen	Nev.	.....	$8,440.11
" 19	Hussey	"	.....	3,100.00
" 20	Northern Belle	"	.....	7,384.22
" 22	Star	"	.....	7,896.00
" 22	Belmont	"	.....	3,568.00
" 23	California	"	.....	141,545.25
" 23	Pioche	"	.....	12,167.51
" 25	Navajo	"	.....	6,000.00
" 27	Jefferson	"	.....	2,658.94
" 27	Manhattan	"	.....	23,210.00
" 22	Extra	Cal.	.....	11,050,00
" 23	Standard	"	.....	16,116.25
" 25	Bodie	"	.....	18,500.00
" 20	Leeds	Utah	.....	5,083.00
" 25	Christy	"	.....	8,896.92

The omission of Idaho mines from the list of productive claims published by the San Francisco *Bulletin* has been remedied, and that paper gives the receipts from two of the mines near Silver City. The Black Jack, from October 1st to November 25th, produced $53,516. The bullion is a mixture of gold and silver, but mostly the latter. The Potosi, from October 7th to November 12th, produced $19,659. There was also $2821 received from the Chadwick mine, in the same locality, on the 18th. The Idaho mines used to give us considerable bullion. The Golden Chariot, Minnesota, Poorman, Empire, Mahogany, and other claims near Silver City were formerly quite productive, but of late they have not been producing a dollar.

The Storey County (Nev.) Bullion Yield for the quarter ending September 30th, 1878, was as under:

NAME OF MINE.	Tons extr'd.	Value per ton.	Gross yield or value.	Total cost.
Andes	720	$17	$12,240.00	$8,640.00
California	20,172	44	895,028.74	561,694.10
Cons. Virginia	17,620	40	715,355.26	539,704.69
Cons. Imperial	3,689	14	51,691.60	57,548.40
Trojan	545	14	8,738 46	22,698.96
Total ores	42,746	....	$1,683,654.00	$1,190,286.15
Tailings:				
Express Mill	1,105	$9	$9,968.45	$8,997,79
Mariposa Mill	4,112	13	56,772.11	34.417.95
Omega Mill	16,291	8	141.198.52	91,742.44
Total tailings	21,508	....	$207,939.08	$135,158.18

Bids for the sale of silver were opened on the 5th inst. at the Treasury Department. Between 400,000 and 500,000 ounces were offered, and a little less than 400,000 accepted, at prices below the equivalent of the London rates. The bidders were principally from New York.

Coinage of the U. S. Mints for November.—The following is a statement of the amount of coinage executed at the United States Mints during the month of November, 1878:

Denomination.	No. of pieces.	Value.
Double eagles	145,650	$2,913,000
Half eagles	25,640	128,200
Three dollars	36,374	109,122
Quarter eagles	83,920	209,800
Total gold	291,584	$3,360,122
Silver standard dollars	2,156,050	2,156,050
MINOR COINS.		
Five cents	100	5
Three cents	100	3
One cent	1,043,300	10,431
Total	1,043,500	$10,439
Total coinage	$3,490,934	$5,526,611

Total standard silver dollars coinage to December 1st, 1878, $20,438,550.

BORDEAUX, December 4.—M. Delbecque, Director of the Mint, has been arrested, charged with abstracting 1,300,000 francs' worth of silver bars belonging to the Rothschilds, and substituting galvanized copper bars.

Trade-Dollar Bills in the Senate.—WASHINGTON, December 2.—The bill introduced to-day by Senator Beck, in reference to the trade dollar, is intended to retire that coin from circulation. The bill gives it a legal-tender quality for 12 months, the purpose of this limitation being to force it into the mints for recoinage into standard dollars. The effect of the bill, if passed, would be to prevent the future coinage of trade dollars.

In the Senate Mr. Voorhees submitted a resolution instructing the Committee on Finance to inquire into the expediency of making the trade dollar a legal tender for all debts, public and private, and of providing for its re-coinage into the standard silver dollar of 412½ grains. It was laid over under the rules.

In the House of Representatives several bills have already been introduced in regard to the re-coinage of the trade dollar and the repeal of the Resumption act.

Pacific Coast Bullion Yield.—The San Francisco *Bulletin* publishes the following, showing the yield of various producing mines: "We give below a statement of the gold and silver yield of thirty-six mines in California, Nevada, Utah, Arizona, and Dakota for the fiscal month of October. These are not all the producing mines, but are all from which reports were obtained. The Caledonia (Black Hills) is added for the first time. Fifteen gold mines give a total of $612,448. No reports were received from the Consolidated Amador, Father de Smet, La Grange, and New York Hill. The Excelsior Gravel and Water Company recently made a clean up of $39,000 in gold, and the Spring Valley Company one of $20,000, but the periods covered were not learned. The gold quartz claims have lately been yielding much less than in previous months this year, and some of these claims have been apparently worked out. The Milton Gravel claim yielded $540,000 between February 15th and October 16th, 1878, when the water gave out. The mill at the Golden Terra mine was run only ten days in October. Fifteen silver mines give a total of $494,308. The Alexander, Hussey Consolidated, and McCrackin mines did not produce a dollar last month. The Martin White and Silver Prize have not been producing any bullion for months, but the furnaces of the former have recently been fired up again. The Belmont has resumed the production of bullion for the first time in months. The gold and silver mines, California, Consolidated Virginia, Independence, and Navajo reported a yield of $309,106 in gold, and $362,943 in silver. The base metal mines, Eureka Consolidated and Tybo Consolidated, produced $149,966 in gold, $223,181 in silver, and $98,126 in lead. The aggregate product is $2,250,078. This is the smallest aggregate for the year, being $100,000 less than in September. Ten of the mines reporting in September, either produced nothing in October or gave no report of it. Three mines, the Caledonia, Belmont, and Navajo, have reported, two of them for the first time this year. The yield of mines reporting for the first ten months of the current year shows an aggregate of $33,846,200. Over 40 per cent represents gold, and the remainder silver, with the exception of $978,000 lead. The gold and silver yield for October was quite evenly divided last month. No large increase in the bullion product of the coast is expected until the development of the Sierra Nevada becomes available."

"A year ago our report for October embraced twenty-seven mines, and for the ten months thirty-eight mines. The contrast in the yield for these respective periods will be seen in the following statement:

	October.	Ten months.
1877	$4,579,900	$40,603,600
1878	2,250,100	33,846,200
Decrease in 1878	$2,320,800	$6,757,400

Several mines that were producing a year ago are not now yielding a dollar, so far as we can learn. Among these are the Alps, Belcher, Challar-Potosi, Crown Point, Day, Empire (Sierra County), Geneva Consolidated, Martin White, Minnietta, Belle, Modoc Consolidated, and Rye Patch Consolidated. The present list of productive mines includes many that were not producing a year ago. But the heavy decline for October is mainly due to the falling off in the yield of the California and Consolidated Virginia mines. Here is the contrast:

	Consolidated Virginia.	California.	Total
1877	$1,674,800	$1,292,400	$2,967,000
1878	387,800	201,400	589,200
Decrease, 1878	$1,286,800	$1,091,000	$2,377,800

"The whole mystery of the decreased yield for October is explained in this brief statement. Another contrast equally unpleasant is the difference in the bullion product of Storey County for the quarter ending September 30th. Here are the totals:

	Mines.	Tons.	Average.	Gross Amount.
1877	8	147,600	$64	$9,505,900
1878	5	42,700	39	1,683,600
Decrease, 1878	3	104,900	$25	$7,822,300

"A year ago the California ore was averaging $75 and the Consolidated Virginia $106, against $44 and $40 respectively for the same quarter this year."

The United States Coinage for the Year.—From the annual report of the Director of the Mint we briefly extract the following statistics, showing the various coinages for the fiscal year:

The value of the gold coinage executed during the last fiscal year was	$52,798,980.00
Of trade dollars	11,378,010.00
Of standard silver dollars	8,573,500.00
Of fractional silver coin	8,339,315.50
And of minor coin	30,694.00
A total coinage of	$81,120,499.50

In addition to the coinage, fine and unparted bars were prepared for depositors in the amount of $12,501,926.23 in gold, and $11,854,385.87 in silver.

It is manifest, from the proven capacity of the several mints, that our coinage facilities are ample for all purposes.

The present production of bullion from the mines of the United States appears to approximate one hundred million dollars in value.

Recent advices from our Minister to China indicate that a considerable amount of trade dollars is now being hoarded in that empire, and will be returned to us if a discrimination be made in their favor over other bullion. No distinction can be made between trade dollars in the United States and those out of the United States; but, if redeemed at all, they must all be redeemed alike. The bullion in 35,853,360 trade dollars outstanding can now be purchased from our miners for $31,256,050. It would be a manifest injustice to deprive them of our market for their bullion, in order to discriminate in favor of bullion coined for exportation, and held chiefly in foreign countries.

The amount of gold coin and bullion in the country, September 30th, is estimated at $259,353,390, and of silver coin and bullion at $99,090,557—a total of $358,443,947.

The Treasury Purchases of Bullion.—WASHINGTON, December 4.—Secretary Sherman has received from San Francisco an offer of one million trade dollars, deliverable there from China within sixty days, and replied that trade dollars will be bought as bullion upon bids each Wednesday, and that no preference will be given to trade dollars over other bullion.

The Secretary says: "There is a strong speculative feeling springing up to give silver bullion in the form of trade dollars a value greater than other bullion; thus discriminating in favor of bullion held in China against bullion in the hands of our miners. The total amount of trade dollars coined is $35,959,360. The amount exported is $25,815,950, and the Chinese returning home are estimated to have taken $5,000,000, which would leave in the United States $5,143,410. Those in domestic circulation were coined, like the others, for exportation, but were put in circulation after they ceased to be a legal tender by the bullion owners."

Trade Dollars Coming Home.—A dispatch dated San Francisco, Dec. 2d, says: "Large purchases of trade dollars have been made in Hong Kong for shipment to New York and San Francisco. A shipment of $200,000 has arrived in England on its way to New York, on account of Seligman Brothers. Further large shipments are on the way, to be shipped by the steamer Belgic, which will leave Hong Kong this week. These shipments have been sold for arrival by a Hong Kong and Shanghai banking corporation and *comptoir discompte*. There is every prospect of all unchopped trade dollars in China finding their way back to this country. The buyers are money-brokers. At the present rate of exchange in China bankers are enabled to lay down trade dollars in San Francisco at 92½ cents each.

One of the firm of Messrs. Seligman & Co., on inquiry being made to him with reference to the above, said:

"Out of the $25,000,000 of trade dollars in China there were only about $700,000 which were unchopped, and therefore available for reshipment to the United States. The 'chopping' of the coins, he explained, was a custom of stamping them with private marks, which was general among Chinese tradesmen. The unchopped coins could be sold in this country for nearly their par value, and were readily taken in the South and West. There was a certain profit to be obtained by their importation, therefore, though the report of the rate at which they could be delivered in San Francisco did not make allowance for all the attendant expenses. There was also a mistake, he said, in the statement concerning the shipment on account of his firm, but he did not care to make any correction."

Salt Lake Ore and Metal Market.

SALT LAKE CITY, Utah, Dec. 6, 1878.

Argentiferous Lead (Base Bullion), $35 per ton for lead; $1.12 per ounce for silver; $20 per ounce for gold. The quotations for silver are based upon the silver in the lead of 80 to 120 ounces per ton of 2000 lbs.

FINANCIAL.

New York Stocks.

NEW YORK, Friday Evening, Dec. 6, 1878.

The dealings in the coal stocks have been very active and the decline has been quite marked. The action of the Board of Control yesterday was anticipated by nearly all who deal in the stocks; hence the decline previous to the report of their proceedings, and the slight decline since. The arguments are all favorable at present to a "short" sale of these stocks, but then there is no telling how soon the cry will be put forth that "the prospects are much more favorable to doing something." The "prospects" will unquestionably fluctuate between now and the first of April.

Unless there is considerable bluff being practiced, it will be impossible to form a combination and give the Lehigh Valley R.R. Co. 22@25 per cent, and the Erie Railway 5@7½ per cent., it being said now that the latter company will ask for 1,500,000 tons of coal.

The sales have been as follows: Delaware and Hudson Canal, 14,779, shares, at 39⅛@34¾, closing at 35¼; Delaware, Lackawanna, and Western, 206,735, at 47⅝@43, closing at 44⅛; New Jersey Central, 11,195, at 29¾@27⅛, closing at 27⅛; Pennsylvania Coal Co., 110, at 141@140. We also note a sale of 50 shares of Consolidation Coal Co., at 25.

Passaic Zinc Co.—An election for directors of this company will be held January 7th.

The Lake Superior Iron Co. announces that sealed proposals for the sale of as many of the Lake Superior Iron Company's first-mortgage bonds as the sum of $40,000 will purchase will be received by a committee appointed for the purpose on or before December 31st. Proposals should state a price for the coupons and interest made up to January 1st, 1879.

COUPONS on the bonds of the following companies fall due during the present month:

Baring Cross Bridge Co.—Coupons.

Delaware, Lackawanna, and Western Railroad Co.—Coupons.

Dunbar Iron Co.—Coupons.

Milwaukee Iron Co.—Coupons due.

Morris and Essex R.R. Co., Con.—Mortgage coupons paid by Delaware, Lackawanna, and Western R.R.

Rockland Nickel Mining Co.—Coupons.

St Louis and Iron Mountain R.R. Co.—Arkansas Branch gold bonds. Coupons due.

Tennessee Coal and R.R. Co.—Coupons.

Miscellaneous Stocks and Quotations.

Sales and quotations of the stocks and bonds dealt in here, at Philadelphia and Baltimore, for the week ending the 6th inst. are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

STOCKS.	Par Value.	High'st	Lowest	Closing	Sales: Shares.
American Coal Co.	$25	.....	.....	30	.....
St.L.,I.M.&S.R.Co..	100	15	13¼	15¼	975
Spring Mt. Coal Co.	50	.....	.....	50	.....
*Cambria Iron Co..	50	.....	.....	50	.....
*Penn. Salt Mf'g Co.	50	.....	.....	67	2
*Westm'land C. Co.	50	.....	.....	46	8
*Buck Mt. Coal Co..	50	.....	.....	38	.....
*Schuyl. Nav. Co....	50	.....	.....	.....	.....
†B.&O.RR.Co.1st pf	.....	.....	.....	100	.....
†B.&O.RR.Co.2d pf	100	.....	.....	92	.....
" " " com	90	89	87¾	88½	113
†George's C'k C. Co	100	.....	.....	86½	.....
†S. Clara M'g Co...	100	.....	.....	25	.....
†Atlantic Coal Co.	10	.....	.....	75	.....

BONDS.	Princ'l. When Due.	Int'est. When Due.	High'st.	Lowest	Amount.
D., L. & W., 7s, conv	1892	J. & D.	105	104¾	5,000
" " " " 2d mtge.	1881	M. & S.	.....	105½	.....
N.J.C.,1stmtge.new	1890	F. & A.	.....	114	.....
" " " 1st mtge.,con	1899	Q.	71¾	70¼	*40,000
" " " convt.....	1902	M. & N.	70½	70	*14,000
Lehigh & W. B., con	1899	Q.	.....	50	.....
Am. Dock & Imp. 7s	.....	J. & J.	50	45	12,000
St.L.I.M.& S..1st mt	1892	F. & A.	109½	.....	20,000
Ches. & O., 1st mtge	1899	M. & N.	30	28½	17,000
D & H C Co.,1stm.rg	1884	J. & J.	.....	.....	.....
" " " " "	1891	J. & J.	96¾	95	13,000
" " " " " m.loan cp	1894	A. & O.	.....	93¾	.....
" " " " " rg.	1894	A. & O.	96	.....	1,000
" " " " " new mge.	.....	.....	.....	.....	.....
*L.V.R.,1stm.6s.cp.	1898	J. & D.	114	.....	7,000
" " " " rg.	1898	J. & D.	.....	110	.....
" " " 2d m. 7s,rg.	1910	M. & S.	116¾	116	5,000
" " " con.m.6s,rg	1823	J. & D.	.....	98½	.....
" " " 6s cp.	1923	J. & D.	.....	.....	.....
*Pa.RR.,1st m.6s,cp	1880	J. & J.	105	.....	36,000
" " g. m., 6s, cp.	1910	J. & J.	.....	110	.....
" " " 6s, rg.	1910	A. & O.	110½	.....	2,000
" " con.m.6s,rg.	1905	Q.	101	.....	12,000
" " " 6s, cp.	1905	J. & D.	.....	102	.....
" " new loan, 5s	.....	.....	110½	110	4,000
*P.& R. R., 1st m.6s, R. C. 43-44.....	1880	J. & J.	104½	.....	1,000
P. & R. R., 1st m. 6s, R. C. 48-49.....	1880	J. & J	.....	.....	.....
P.& R. R.,2d m.7s cp	1893	A. & O.	.....	110	.....
" " " scrip....	1882	J. & J.	49	.....	3,500
" " " in.m.7s,cp	1896	J. & D.	.....	.....	.....
" " " c.m.7s,cp.	1911	J. & D.	101	.....	5,000
" " " " 7s. rg.	1911	J. & D.	97½	.....	2,000
" " " cvt.7s,R.C	1893	J. & J.	40	.....	2,000
" " C.& I.Co.,Deb 7s, R. C.....	1892	M. & S.	.....	.....	.....
& R.C.& I. Co., m. 7s, R. C.....	'92-3	various	.....	.....	.....
L. Nav. Co.,6s,rg.m.	1884	J. & D.	105	.....	3,300
" " RR., rg. m.	1897	F. & Q.	.....	.....	.....
" " cvt. co. G. R.	1894	M. & S.	96	.....	1,000
" " " Gold R. C.	1897	J. & D.	95	94	3,500
" " con.m.7s,rg.	1911	J. & D.	.....	.....	.....
*P.& N.Y.C.,7s,R.C.	1896 1906	J. & D.	.....	112½	.....
*Pa Canal, 6s. cp..	1910	J. & J.	65½	.....	1,000
*Schuyl.Nav.,1st m. 6s. rg.....	1897	M. & D.	.....	80	.....
*Sus. Coal, 6s, rg...	1911	J. & J.	83	80	2,000
†Balt.&O. RR., 6s..	1880	J. & J.	.....	103	.....
" " " " 6s..	1885	A. & O.	.....	105¼	.....

Total transactions for the week.....$212,390

* Assented.

Philadelphia Stocks.

PHILADELPHIA, Friday Evening, Dec. 6, 1878.

Although there has been a decline in all of the stocks identified with coal-carrying in this market, yet it has not been so great as at New York. In fact, by many, the breaking of the coal combination is consid-

COAL STOCKS.

Quotations of New York stocks are based on the equivalent of $100. Philadelphia prices are quoted, so much per share.

NAME OF COMPANY.	Capital Stock.	SHARES. No.	SHARES. Par Val.	Last Dividend.	Rate per Ann.	Nov. 30. H.	Nov. 30. L.	Dec. 2. H.	Dec. 2. L.	Dec. 3. H.	Dec. 3. L.	Dec. 4. H.	Dec. 4. L.	Dec. 5 H.	Dec. 5 L.	Dec. 6. H.	Dec. 6. L.	SALES.
	$		$	Mo. Y. A't.	Per c'nt													
Consol. Coal.	10,250,000	102,500	100	Jan. 77 2½	...	25	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
Del. & H. C..	20,000,000	200,000	100	Aug 76 4	9	39⅛	37⅞	37½	35½	36¾	35¼	36⅞	35¾	36¾	35½	35⅝	34¾	14,770
D., L.& W. RR	26,200,000	524,000	50	July 76 2½	5	47⅝	46	46⅞	45⅝	46¾	45¼	47	46⅛	46⅜	45⅜	45⅜	43	206,735
Lehigh C.& N	10,448,550	208,971	50	Nov 76 1½	5½	15⅝	1⅜	15¼	15½	15	14⅜	15	15	15	14⅞	14⅞	14⅝	7,727
Leh. V'y R. R	27,228,855	540,858	50	July 78 1	...	36¾	36¼	36⅜	36½	36⅝	36¼	36⅜	36¼	36½	36¼	35⅝	35¼	3,455
Maryl'd Coal	4,400,000	44,000	100	Jan. 76 1½	1½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N. J. C. R. R.	20,600,000	206,000	100	Apr 76 2½	2½	29¾	28¾	29	28½	29	28¾	29	28½	29	27½	28	27½	11,195
Penn. Coal...	5,000,000	100,000	50	May 78 3	...	.....	.....	.....	.....	141	141	.....	.....	.....	.....	140	.....	110
Penn. R. R...	68,870,200	1,337,404	50	May 77 1½	8	32⅞	32¾	32⅝	32⅜	32½	31¾	32	31¾	32½	31⅞	32	31⅞	23,798
Ph. & R. R. R	34,278,175	685,563	50	Jan 76 +2½	10	12½	12¼	12¼	11⅞	12⅜	11¾	12¼	11⅞	12¼	11⅞	12	11⅝	26,104

The Delaware and Hudson Canal Co. has paid in dividends to date $38,821,104, and the Philadelphia and Reading $43,012,497.

Total Sales.....302,953.

GENERAL MINING STOCKS.

Dividend Paying Mines.

Name and Location of Company.		Feet on Vein.	Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total levied to date.	Assessments. Date and amount per share of last.	Dividends. Total paid to date.	Dividends. Last Dividend.	Rate p. An	Highest and Lowest Prices per Share in Currency at which Sales were Made. Nov. 30. H.	Nov. 30. L.	Dec. 2. H.	Dec. 2. L.	Dec. 3. H.	Dec. 3. L.	Dec. 4 H.	Dec. 4 L.	Dec. 5. H.	Dec. 5. L.	Dec. 6. H.	Dec. 6. L.	Sales.
Alps	Nev.	800		30,000		204,000	Sept. 1878 $1 00	37,500	Apr. 1876 $0 50														
Belcher, g. s.	Nev.	1,040	10,400,000	104,000	100	1,392,200	Oct.. 1878 1 00	15,397,200	Apr. 1876 1 00	12													
Bobtail, g.	Col.	2,500	1,136,630	227,326	5	*		56,831	Nov. 1877 25						2								100
Bobtail Tunnel, g.	Col.		100,000	20,000	5	52,000	July 1873 0 30	48,000	June 1878 50														
Bodie, g.	Cal.		5,000,000	50,000	100	25,000	Feb. 1878	650,000	Oct. 1878 2 00	20													
California, g. s.	Nev.	600	54,000,000	540,000	100			29,160,000	Aug. 1878 1 00	24	9¾	9⅛			175¾	175	175¼	10	175¾	175⅛			65
Calumet & Hecla, c.	Mch		2,000,000	80,000	25	1,200,000		13,450,000	Aug. 1878 5 00	20													130
Central, c.	Mch		500,000	20,000	25	100,000	June 1862 0 65	1,260,000	Feb. 1878 5 00														
Chollar Potosi, g. s.	Nev.	1,400	2,800,000	28,000	100	1,750,000	Sept. 1878 5 00	3,040,000	Feb. 1872 1 00														
Copper Falls, c.	Mch		1,000,000	20,000	50	535,000	May. 1876	100,000	Nov. 1871 1 00														
Cons. Virginia, g. s.	Nev.	710	54,000,000	540,000	100	474,600	June 1873 3 00	40,500,000	June 1878 1 00	12	7¾	7⅛	9¼	8	8⅛		8¼		8¼	7⅞	7½	7¼	295
Confidence, g. s.	Nev.	130	2,496,000	24,960	100	256,320	Apr. 1878 0 50	78,000	May. 1865	8½ 8½													
Cons. Her. & Roe	Col.	16,500	1,000,000	100,000	10	*																	
Crown Point, g. s.	Nev.	600	10,000,000	100,000	100	1,873,370	Sept. 1878 1 00	11,588,000	Jan.. 1875 2 00	24													
Daney	Nev.	2,000		108,000		74,220	July 1877 0 20	56,000	July 1863 1 10½														
Eureka Cons., g. s. L.	Nev.		5,000,000	50,000	100	100,000	1876 1 00	2,950,000	Aug. 1878 3 00	24													
Eureka G. Mg., g.	Cal.	1,680	2,000,000	20,000	100			2,149,000	Apr. 1878 0 25														
Franklin, c.	Mch		500,000	20,000	25	360,000	June 1876 5 00	585,000	Nov. 1871 1 00														
Gila	Ariz			100,000		50,000	Apr. 1878 0 25	50,000	Aug. 1875 0 25														
Gould &Curry, g. s.	Nev.	612	10,800,000	108,000	100	2,666,000	Apr.. 1878 1 00	3,826,800	Oct. 1870 10 00														
Grand Prize	Nev.	1,500		100,000		100,000	July. 1878 1 00	400,000	Feb. 1878 1 00								9¾						5
Hale & Norcross, g. s.	Nev.	400	11,200,000	112,000	100	2,914,000	Aug 1878 1 00	1,598,000	Apr. 1871 5 00	12													
Hukill, g. s.	Col.	3,288	1,000,000	100,000	10	*			Dec. 1878 0 10	12			4¼	4.15	4.20	4.10	4.15						1,010
Independence	Nev.	1,500		100,000		55,000	Feb.. 1878 15	125,000	Oct. 1878 25		1.70	1.55	1.55		1⅛	1.45	1.40	1¼	1.30	1¼	1.30	1¼	2,835
Kentuck, g. s.	Nev.	95	3,000,000	30,000	100	300,000	Aug. 1878 1 00	1,252,000	Mar. 1870 5 00														
K. K. Cons.	Nev.			50,000		250,000	Nov. 1878 1 00	50,000	Sept. 1873 0 25														
Leeds	Uth.	3,000		60,000				18,000	Oct.. 1878 0 15		1¼						1¼						150
Leopard, L. g. s.	Nev.	1,500	5,000,000	50,000	100	175,000	Oct.. 1878 50	162,500	Dec. 1876 0 50														
Manhattan	Nev.			50,000		50,000	Oct.. 1878 1 00	400,000	Feb. 1877 1 00														
Merrimac, s.	Mas.	1,500	500,000	100,000	5	*	June	120,000	Mar. 12														
Minesota, c.	Mch.		1,000,000	20,000	50	436,000	1869 1 00	1,820,000	Mar. 1876 0 50														
Modoc	Cal.	4,000		100,000		350,000	Sept. 1878 0 50	50,000	Dec. 1876 0 50														
Moose	Col.	39,000	2,000,000	200,000	10	*		550,600	Mar. 1878 0 25	10	4½		4⅜		4¾	4.45	4.55		4.90	4.60	4.95	4.70	2,400
National, c.	Mch.		500,000	20,000	25	195,000	Oct.. 1875 1 00	360,000	Oct. 1873 1 00														
N. Y. & Colorado, g.	Col.		1,000,000	50,000	20	*		20,000	Mar. 1877 0 20				1.45		1.45	1.40					1.45		1,000
Northern Belle, s.	Nev.	1,600	5,000,000	50,000	100			1,425,000	Feb. 1878 1 00														
Ontario	Uth.	3,000	10,000,000	100,000	100			1,900,000	Dec. 1878 50	12							38¾	38⅛	39¾	39			145
Ophir, g. s.	Nev.	675	10,080,000	100,800	100	3,436,800	Nov. 1878 1 00	1,394,400	Mar. 1864 4 00												32		10
Pewabic, c.	Mch.		500,000	20,000	25	185,000	June 1868 3 00	460,000	July 1873 1 00														
Phœnix, c.	Mch.		1,000,000	20,000	50	817,500	Sept. 1870 3 00	10	Dec. 1876 1 00														
Plumas	Cal.		1,000,000	100,000	10			100,000	Dec. 1878 10		3.80		3.75	3.70	3¾	3.70	3¾	3.70	3.80	3¾			1,700
Polar Star, g. s.	Col.	1,300	500,000	50,000	10	*		5,000	Jan. 1878 0 10														
Quincy, c.	Mch.		200,000	20,000	10			2,230,000	Feb. 1878 5 00														
Raymond & Ely, g. s.	Nev.	5,000	3,000,000	30,000	100	630,000	Oct.. 1878 1 00	3,075,000	Sept. 1872 3 00														
Ridge, c.	Mch.		500,000	20,000	25	200,000		90,000	Feb. 1875 1 00														
Rye Patch	Nev.	1,600		30,000		97,500	Nov. 1876 0 50	105,000	Dec. 1877 0 25														
St. Joseph, L.	Mo.	2,000 acs.	1,000,000	100,000	10			250,000															
Savage, g. s.	Nev.	800	11,200,000	112,000	100	3,972,500	Sept. 1878 1 00	4,460,000	June 1869 3 00														
Seaton, g. s.	Col.	1,700	500,000	50,000	10	*			May 1877 0 10	12													
Sierra Nevada, g. s.	Nev.	3,650	10,000,000	100,000	100	2,350,000	Oct.. 1878 3 00	102,000	Jan. 1871 1 00	10													
Silver Islet	Mch										49		54		54		53½	50	47	46			160
Silver King								450,000	Nov 1878 0 50														
Standard	Cal.			50,000		50,000	July 1878 1 00	700,000	Oct.. 1878 1 00														
Yellow Jacket, g. s.	Nev.	1,200	12,000,000	120,000	100	3,798,000	Sept. 1878 1 00																
McClinton	Cal.	1,000		50,000																			

Non-Dividend Mines.

Allouez, c.	Mch.		1,000,000	20,000	50	940,000	May 1876 5 00																
Alpha, g. s.	Nev.	300	3,000,000	3,000	100	240,000	Mar. 1878 1 00																
Alta	Nev.	600		100,000		885,000	July 1878 1 00																
Am. Flag, g.	Col.	5,300	600,000	60,000	10	*									23c	19c	20c	19c					3,000
Andes	Nev.	2,000		100,000		355,000	Oct 1878 0 25																
Baltimore Cons.	Nev.	1,050		84,000		1,015,000	Apr. 1878 0 50																
Benton	Nev.	600		108,000		37,800	Aug. 1878 0 35																
Bechtel	Cal.			60,000		75,000	Nov. 1878 0 25																
Bertha & Edith. g.	Vir.	645 acs.	3,500,000	350,000	10	*					10c		10c	9c	10c	9c	9c	8c	10c	8c	9c	8c	42,000
Best & Belcher, g. s.	Nev.	545	10,080,000	100,800	100	438,590	Apr. 1878 1 00																
Boyle	Nev.	600		108,000		16,240	Aug. 1878 0 15																
Buckeye	Col.		2,000,000	400,000	5	*					43c		55c	53c	55c		55c				53c		2,500
Bullion, g. s.	Nev.	943½	10,000,000	100,000	100	2,952,000	Aug. 1878 1 50				7⅝										5⅛		15
Caledonia, g. s.	Nev.	2,188	10,000,000	100,000	100	1,540,000	Nov. 1878 0 50																
Cashier	Col.		500,000	250,000	2	*																	
Challenge	Nev.	90		50,000																			
Cleveland, g	Col.	3,715	250,000	25,000	10	*																	
Cons. Imperial, g. s.	Nev.	468	50,000,000	500,000	100	775,000	Sept. 1878 0 20																
Con. N. Slope & E. C.T.	Col.	15,000	500,000	10,000	50	*																	
Dahlonega	Ga.		250,000	250,000	1	*					15c		15c		15c		15c	14c	17c	14c	15c	14c	6,500
Dana, c.	Mch.		500,000	20,000	25	68,000	Jan.. 1863 0 50																
Dawson, s.	Ont.		1,200,000	60,000	20		1878																
Day	Nev.	1,500		100,000		55,000	Sept. 1878 0 25																
Dayton	Nev.	1,600		100,000		75,000	Apr. 1878 0 25																
De Frees	Ariz	1,500		100,000		115,000	Oct. 1878 15																
Duncan, s.	Ont.		1,200,000	60,000	20	75,000	July 1876 41⅔								5	†	4⅞						850
Exchequer, g. s.	Nev.	400	10,000,000	100,000	100	380,000	Jan.. 1878 1 00																
Findley, G.	Geo.		200,000	200,000	1																		
Gold Placer, g.	Col.		5,000,000	200,000	25						30c	28c	29c	28c	30c	27c	28c	26c	29c	26c	27c	25c	18,400
Granville, g.	N. C.	357 acs.	1,000,000	100,000	10	*			0 50														
Humboldt, c.	Mch.		500,000	20,000	25	100,000	Sept 1878 0 15																
Hussey	Nev.	4,500		100,000		95,000	Oct.. 1876 0 25																
International, s.	Ont.		1,200,000	60,000	20																		
Julia, g. s.	Nev.	3,000	11,000,000	110,000	100	745,000	Nov. 1878 1 00				3¼												10
Justice, g. s.	Nev.	2,100	10,500,000	105,000	100	2,658,500	Aug. 1878 1 05																
King's Mountain, g.	N. C.		1,200,000	120,000	10	*	1877																
Kossuth	Nev.	2,700		108,000		421,200	Aug. 0 15																
Lacrosse	Col.	3,900	1,000,000	100,000	10	*					36c	35c	36c	33c	35c	33c	34c	33c	37c	33c	35c	33c	32,800
Leviathan	Nev.	2,000		100,000		240,000	May. 1878 05																
Luzerne	Col.	4,200	5,000,000	500,000	10	*																	
Madison, c.	Mch.		500,000	20,000	25	123,000	Sept 1876 0 10																
Mariposa preferred	Cal.	44,387	5,000,000	50,000	100	1,425,000	June 1877 1 00								3¼								100
" common	Cal.	acres.	10,000,000	100,000	100	1,425,000	June 1878 1 00																
McCracken	Ariz	4,500		100,000		100,000	Oct . 1878 1 00																
Martin White	Nev.			100,000		500,000	July 1877 0 50																
Mesnard, c.	Mch.		500,000	20,000	25	160,000	Apr. 1876 0 50																
Mexican, g. s.	Nev.	600	10,080,000	100,800	100	217,400	May. 1878														20		20
Minnietta Belle.	Cal.	1,500		100,000		75,000	Apr. 1878 0 50																
Mt. Bross Tunnel	Col.	8,600	2,000,000	200,000	10	*	1878																
Navajo		1,500		100,000		125,000	May. 1878 0 25				90c	80c	1	85c	70c	65c	55c		55c	50c	60c	55c	2,630
New York	Nev.	1,000		100,000		780,000	Nov. 1878 0 30																
Occidental	Nev.	1,706		40,000		72,500	Feb. 1877 0 25																
Orig. Keystone	Nev.	1,500					Oct. 1878 0 50																
Overman, g. s.	Nev.	1,200	3,840,000	38,400	100	3,404,280	Sept. 1878 3 00																
Osceola, c.	Mch.		1,000,000	40,000	25	2,567,880	Nov. 1877 3 00												11¾				50
Petherick, c.	Mch.		500,000	20,000	100	165,533	Mar. 1876 0 50																
Pleasant View, g.	Col.	1,200	200,000	20,000	10	*																	
Quicksilver preferred	Cal	8,500	4,291,300			*																	
" common	Cal.	acres.	5,708,700	100,000	100										11		10⅛		34¼	33⅛			125
Rockland, c.	Mch		500,000	20,000	25	495,000	Jan.. 1874 1 00																200
Seg. Belcher, g. s.	Nev.	160	640,000	6,400	100	244,800	Apr. 1876 5 00																
Silver Hill, g. s.	Nev.	5,400	10,800,000	108,000	100	1,296,000	Sept. 1878 0 50																
Silver Prize	Nev.	1,500		100,000		40,000	Nov. 1878 0 15																
Star, c.	Mch.		500,000	20,000	25	295,000	Mar. 1876 0 50																
Superior, c	Mch.		500,000	20,000	25	340,000	Mar. 1878 0 25																
Tiptop																							
Tioga	Cal.	1,500		100,000		20,000	Oct. 1878 0 20				1⅛		1⅛		1⅛		1.45						530
Trojan	Nev.	1,500		100,000		240,000	Oct. 1878 0 25																
Union Cons. g. s.	Nev	850	10,000,000	100,000	100	310,000	Apr.. 1874 0 25																
Utah	Nev.	1,000		20,000		68,000	Oct . 1878 1 00																
Ward	Nev	1,200		110,000		66,000	Sept 1878 0 30																
Wells Fargo	Nev	1,500		108,000		216,000	Sept 1878 0 50																
Trio																			45c		45		300

g. Gold. s. Silver. l. Lead. c. Copper. * Non-Assessable. †4 15-16.

Total Assessment levied to date $37,586,713

Total Dividends paid to date $151,210,231

Total Sales for the week ..... 139,960.

ered an advantage to the companies whose stocks are represented in this market. The following transactions have taken place during the week: Lehigh Coal and Navigation Co., 7727 shares at $15⅝@$14⅝; Lehigh Valley R. R., 3455, at $36¾@$35¼; Pennsylvania R. R., 28,798, at $32⅛@$31¾; Philadelphia and Reading, 26,104, at $12⅛@$11⅝.

Gas Stocks.

NEW YORK, Friday Evening, Dec. 6, 1878.

We note a little better feeling in the gas stock market. Although prices have not changed materially, there is a decided improvement generally, and most especially in New York stocks.

Baltimore Gas Co.—We are reported recent transactions in the stock of this company at $90@$92, ex dividend of $4 per share.

The Automatic Gas-Lamp Co. has petitioned the Common Council of Brooklyn for permission to place six automatic gas lamps upon posts in the vicinity of the City Hall for public inspection.

East Saginaw (Mich.) Gas Co.—This company was organized in 1863 with a capital stock of $50,000. In October, 1866, the capital stock was increased to $150,000, and in 1873 the new gas-works were erected at a cost of $75,000. The company supplies about 1000 consumers through 20 miles of pipe.

The Chicago Gas Co.—We note the following advertisement: "Notice to holders of the registered construction bonds of the Chicago Gas Light and Coke Company: By a resolution of the Board of Directors of said company, passed on the 25th day of November, it was ordered that 37 per cent of the aggregate amount of the outstanding bonds of this Company are hereby called in and ordered to be paid off, and the same will be redeemed at the office of the company on and after the first day of January, 1879, after which date the amount so called in will cease to bear interest."

The St. Louis Gas Troubles.—A dispatch to the Cincinnati *Enquirer*, dated St. Louis, Mo., November 26th, says: "A communication from Rufus J. Lockland, President of the St. Louis Gas-Light Company, asking for the appointment of a committee to compromise the suit between the Gas Company and the city, which has been pending in the courts for some time, was presented to the City Council tonight. After discussing the matter, it was referred to the Standing Committee on Ways and Means, with instructions to report in favor of whatever action they deemed advisable to the interests of the city. The case was decided in favor of the city in the lower courts, and is now upon the docket of the Supreme Court. The above proposition took every one by surprise, but it is generally believed that the case can not be settled outside of the courts."

English Gas Shares.—LONDON, December 4, 1878.—Gas shares have improved, because the public experiments with the electric light are regarded as unsatisfactory.

COUPONS on the following companies due during the month:

Citizens' Gas Co., of Newark.—Coupons.
People's Gas-Light and Coke Co., Chicago.—Coupons.
Metropolitan Gas-Light Co.—Coupons.

The following list of Companies in New York and vicinity is corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas Stocks, No. 30 Broad street, New York:

COMPANIES IN NEW YORK AND VICINITY.	Capital Stock.	Par.	DIVIDENDS. Rate per ann.	Am. of last.	Date of last.	QUOTATI'NS Bid.	As'd.
	$		P. ct.				
Mutual, N. Y....	5,000,000	$100	6	1½	Oct., '78	55	65
" Bonds...	90,000	1,000	6	3½	Aug., '78	95	103
N. York "	4,000,000	.....	8	4	May, '78	80	85
Metrop. "	2,500,000	100	10	5	Aug., '78	100	110
" Certfs...	1,000,000	.....	7	3½	" '78	95	98
Harlem "	1,850,000	50	6	3	Feb., '78	30	40
Manhat. "	4,000,000	50	....‡	5	May '78	145	155
Brooklyn, Bkln.	2,000,000	50	15	5	Apr., '78	115	120
Nassau	1,000,000	25	....‡	3	July, '78	50	55
" Certfs....	700,000	1,000	7	3½	May, '78	80	90
People's.....	1,000,000	10	....‡	3½	Jan., '76	17	25
" Certfs....	300,000	1,000	7	3½	July, '78	75	90
" Bonds....	325,000	.....	7	3½	May, '78	90	96½
Metrop. "	1,000,000	100	5	2½	May, '78	50	60
W'msb'g "	1,000,000	50	8	1½	July, '78	75	85
" Certfs...	1,000,000	.....	7	3½	July, '78	85	90
Citizens'.....	1,200,000	20	....‡	3	July, '78	50	60
" Certfs...	320,000	1,000	7	3½	Apr '78	90	95
J. C., N. J.....	750,000	20	10	7½	July, '78	120	140
Municipal, N. Y.	466,000	50	.....	.....	.....	78	85
" Bonds..	750,000	.....	.....	.....	.....	.....	...
.....	.....	.....	.....	.....	.....	.....	...

Copper Stocks.

Reported by WILSON W. FAY & Co., Brokers in Mining and Miscellaneous Stocks, Room 7, Traveller Building, 31 State street.

BOSTON, Wednesday Evening, Dec. 4, 1878.

The market has been very quiet for the past week, there being little or nothing doing in the "coppers," and not as much as usual in the "silvers." The stocks have also shown a decided weakness, which is attributed to the reaction after the late advance in prices, and which was expected by the majority of those interested; and yet the recent rise in them shows that they are yet capable of an advance and want but a more active market in ingot copper to become lively and popular once more.

Allouez remains unchanged.

Calumet and Hecla has declined to 175 bid, and 175½ asked, and sales at 175¼.

Copper Falls looks firm at 1@1¼, and looks more as though it was a good purchase, at those figures, than a sale.

Franklin is quiet and unchanged.

Osceola has delined to 11½@12¼, and no sales, and closes weak

Pewabic sold at 1¼, and closes at 1@1½.

Quincy is somewhat weaker at 11@11¼, and no sales.

Ridge is steady at 1⅛@1¼.

Duncan has strengthened somewhat and sold up again to 5, but closes a little weaker at 4⅝@4⅞.

At the annual meeting of the company, held December 2d, the old officers were reëlected with one or two minor exceptions, and the Treasurer's report made a very fair showing, they having received during the year about $55,000 on installments, out of which they have paid $15,000 back debt, have also paid for the machinery and furnished the mine with supplies until navigation opens, and are free of debt, and have $5500 on hand, showing their expenses to have averaged $2100 per month.

International is quiet at 45@50c.

Silver Islet is weaker at 49@50, and looks as though it would go lower.

The Houghton *Mining Gazette* publishes the following relative to this year's copper production in the Lake Superior district:

"The last shipment of copper was made on the 24th ult., which cleaned up the production of our mines for about the past twelve months. The yield of copper on the lake for the year ending with the above date is a few hundred tons in excess of the corresponding time last year. The notable increase is in the case of the Calumet and Hecla, which afforded in the neighborhood of 1600 tons more mineral. The Franklin yield is about 200 tons greater. From what information we have at hand now, the yield of the Atlantic, Quincy, Osceola, Allouez, Central, and Pewabic mines will be nearly the same as last year. The Phœnix yield is some less. Ontonagon County has probably held its own."

Gold and Silver Stocks.

NEW YORK, Friday Evening, Dec. 6, 1878.

The business at the Mining Exchange during the week under review has been very small, and shows but little encouragement to those who have good properties to capitalize. The existing business, however, is no criterion of what will and can be done. At the present time, there are but very few mines on the list that indicate a value equal to the quoted prices of the shares. Give us good mines that can earn dividends, with a fair promise of continuing them, and then keep the public advised as to the production, expenses, developments, prospects, etc., and there will be an active business in mining stocks. There are a number of good mines seeking a market in the East, and no doubt some of them will be placed upon the list of the Mining Exchange.

The dealings in the San Francisco stocks at the Mining Exchange have not been important. We note the following sales: California, 65 shares at $9½@$10¼; Consolidated Virginia, 295, at $9½@$7¼; Grand Prize, 5, at $9¾; Leeds, 150, at $1¼; Ophir, 10, at $32; Bullion, 15, at $7⅜@$5⅛; Julia, 10, at $3¼; Kossuth, 600, at 28@35c.; Mexican, 20, at $20; Navajo, 2630, at $1@50c.; Tip Top, 520, at $1.50@$1.45; Independence, 2835, at $1.70@$1.25. The experience of Eastern speculators has not been satisfactory in the low-priced San Francisco stocks, especially to those who took the "long" side. "We advise" that hereafter the public will find out something about the value of these stocks before it invests in them.

In the stocks of the regular list, we note the following transactions: Bobtail, 100 shares, at $2; Hukill, 1010, at $4.20@$4.10; Moose, 2400, at $4.10@$4.95; New York and Colorado, 1000, at $1.45@$1.40; Plumas, 1700, at $3.70@$3.80; Findley, 17,100, at 62@68c. In the fancies we note the following: American Flag, 3000 shares, at 23@19c.; Bertha and Edith, 42,000, at 10@8c.; Dahlonega, 6500, at 17@14c.; Gold Placer, 18,400, at 30@25c.; Lacrosse, 32,800, at 36@33c.

The old bonanzas are fairly maintained. If they could be wrested from the ring power, we should see what merit would have to do with prices, for no doubt there is some good left in the old team yet. It is possible that the California may pay a dividend on the first of the year, as it is thought that sufficient reserve may be accumulated for the purpose.

The American Consolidated Gold and Silver Mining Co. has been lately reorganized with the following trustees: Chas. L. Wright, Chas. Burnham, John D. Brown, J. F. Seymour, Wm. L. Campbell. Chas. L. Wright was chosen President and Chas. Burnham, Secretary. In the Slide mine, owned by this company, it is reported that 30 men are working, while additional machinery is to be put up at the American. An interrogatory put to one of the new trustees elicited the information that "dividends will not be declared until they are earned."

The production of the Plumas mine for November was $16,039; expenses, $4864. This company has declared a monthly dividend of 10c. per share.

The Hukill Co. has declared a dividend of 10c. per share.

The Denver *Tribune* is authority for the following:

"Superintendent Holman is gradually but surely bringing the Cashier mine into paying condition. Rich bodies of ore are being opened in the east and west shafts, and in the 100-foot level from the main shaft. The last ore milled ran over five ounces, but there are streaks of much better material. The working-force has been increased. A large shaft and ore building has lately been erected over the main shaft and a smaller house further west. A powerful engine and hoisting works are soon to be placed in the former so that sinking can be continued for hundreds of feet without interruption. A large amount of ore has been raised and stored in the shaft-houses. This property will be numbered among the paying mines as soon as opened in the systematic manner proposed, and as has already been perfected in the Kansas, California, Kent County, and others."

The Sutro Tunnel stock has sold at the New York Stock Exchange to the extent of 3200 shares, at 50½ @49 per cent, and in Boston 600 shares, at 50 per cent.

The Ontario Silver Mining Company has declared Dividend No. 38 for November—fifty cents per share—payable at Wells, Fargo & Co.'s on the 16th inst. Advices from the mine report the mill in operation again and the mine being prepared for a large output of ore. The new furnace is also completed, by which a material increase in the producing power of the company is expected.

SAN FRANCISCO MINING STOCK QUOTATIONS.

Daily Range of Prices for the Week.

NAME OF COMPANY	CLOSING QUOTATIONS Nov. 29.	Nov. 30.	Dec. 2.	Dec. 3.	Dec. 4.	Dec. 5.	Opening. Dec. 6.
Alpha.....	9½	9¾	10	9¾	9	8	8½
Alta.....	7	7	7	6¾	5¾	5½	5½
Argenta..	....	....	....	....	....	....	....
Bechtel....	....	....	....	30c	....	....	....
Belcher....	4⅝	4⅝	4¾	4¾	4½	4	4
Belle Isle ..	....	....	....	....	....	....	....
Benton.....	....	....	....	....	....	....	....
Best & Bel.	17⅛	20¼	20¼	18⅞	18	17	17½
BlackHawk	....	....	½	....	....	....	....
Bodie.....	16½	16	16¾	16¼	16	14½	....
Booker.....	....	....	....	....	....	....	....
Bullion.....	6½	6⅝	6¼	5⅝	5	4⅛	4½
Bulwer.....	....	....	....	....	....	....	....
Caledonia..	2¼	2¾	2⅝	2½	2½	1½	2
California..	9¼	10	10⅛	9½	10⅛	9¼	9⅛
Chollar-Pot	36	38½	38½	36	36	35½	35
Confidence.	5½	....	5½	7	7	5	....
Con. Imp ..	....	....	....	....	....	....	....
Con. Va....	7⅛	7¾	8¼	7½	7½	7¼	7⅛
Crown P'int	5	5	5	5	4½	3½	4
Endowm'nt	....	....	....	....	....	....	....
Eureka Con	36¼	35½	36¾	36¼	36	35½	....
Exchequer.	4⅜	4¾	4¼	4	3⅞	2⅞	....
Goodshaw.	....	....	....	....	....	....	....
Gould &Cur	8¼	9⅜	9¼	8¾	8½	7¼	7½
Grand Prize	10⅝	9⅜	9⅝	8¾	8⅞	8¼	....
Hale & Nor.	12⅛	13¼	12¾	12⅛	11	10	10
Hamburg..	....	....	....	....	....	....	....
Homestake	....	20	20	20	20	....	....
Hussey.....	....	....	....	....	40c	....	....
Indep'd'nce	....	....	....	1¼	1¼	....	....
Jackson....	....	....	....	....	....	....	....
Julia Con...	2⅜	2⅝	3⅛	3⅛	3	2⅜	2½
Justice....	4⅜	4⅝	4¾	4¾	4½	4	4
Kentuck ...	4½	....	....	4¼	4¼	4	¼
Kossuth....	....	35c	30c	40c	40c	....	....
Leopard....	....	1¼	....	1¼	1¼	....	....
Leviathan..	....	1¾	1½	....	....	....	....
Manhattan.	....	....	....	....	....	....	....
McClinton..	....	....	....	....	....	....	....
MeadowVal	....	....	....	....	....	....	....
Mexican....	32	34½	33½	30	26	21½	23
Mono.....	....	....	6	....	....	....	....
Navajo.....	....	¾	½	....	40	....	....
North. Belle	10	....	9¾	10	10	9¾	....
Ophir.....	40	42¾	43	40½	36½	34	35
Orig. K'ys'e	....	....	....	....	....	....	....
Overman...	12¼	12¾	13	12½	12	10	9¾
P. Sheridan	....	....	....	½	½	....	....
Ray. & Ely	9¼	9	9¼	9½	9½	9	....
Richer.....	....	....	....	....	....	....	....
Savage.....	10⅝	11⅜	10⅝	10¾	10	9¼	9½
Scorpion...	....	....	....	....	....	....	....
Seg.Belcher	....	....	....	....	....	....	20
Sierra Nev.	43½	49¾	51½	47¾	45½	38¾	40
Silver Hill..	1⅝	1⅜	....	1¾	1⅝	1¼	....
Silver King	....	....	....	....	....	....	....
Summit....	....	....	....	....	....	....	....
Tioga.....	....	....	....	....	....	....	....
Tip Top....	....	1½	....	1½	1½	....	....
Union Con.	57½	63¾	55	50	46½	38½	40
Utah.....	....	....	....	....	....	....	....
Ward	....	....	....	....	....	....	....
WashoeCon	....	....	....	....	....	....	....
Wells Fargo	....	....	....	....	....	....	....
Yel. Jacket.	14¼	15	14	13¼	12	10¾	....
.....	....	....	....	....	....	....	....
.....	....	....	....	....	....	....	....
.....	....	....	....	....	....	....	....

REVIEW OF THE SAN FRANCISCO MARKET.

A portion of the information which we give in our review of the San Francisco market is derived from those papers published in proximity to the mines, and a portion also from superintendents' letters.

We have to record another week of depression in values of San Francisco mining shares, and in face of all accessible testimony the position is certainly an anomalous one.

A dispatch to the *Graphic* of the 5th, from San Francisco, says of the Sierra Nevada:

"The north cross-cut in the mine has been stopped. The face of the cross-cut is in ore. The north drift, which is being now run, has connected with the winze from the 1700-foot level. In the incline the ore is very rich. From indications there is a fine body of ore coming in and a 'big bonanza' on the 2300-foot level. The management will penetrate as speedily as possible to the 2300-foot level. It will take sixty days."

It is now rumored that Flood & O'Brien and the Nevada Bank have secured control of the Sierra Nevada. Certain it is that, whoever may have control, the market is not favorably affected; for many of the quotations open to-day at nearly the lowest yet attained, and all of this in face of a rapidly growing

favor toward mines as investments, and the most energetic measures possible toward opening and developing mines on the Comstock, which have scarcely any foundation but faith to encourage their projectors.

Alpha opens at nearly the lowest of the week, and considerably below our last. The face of the joint Alpha-Imperial winze is in a formation of porphyry, with fine streaks of quartz. Alta is decidedly lower opening at $5⅛ against $7⅛ in our last. The north drift on the 1450 level of this mine appears to improve rapidly as progress is made. Argenta is very active in San Francisco, at from $3 to $4.25 per share. We have no quotations per telegraph. The condition of this mine is favorable, and the company anticipates soon beginning the production of ore.

The stock of the Bulwer Mining Co. is selling in San Francisco at from $13 to $16.50. It is anticipated to soon commence production from this mine. Recent advices report the discovery of some very rich ore.

Bullion opens to-day at the lowest of the week, viz., $4⅛ against $6⅛ as in our last. A vein of sulphuret of copper has been found on the 2000 level of this mine, and against the "favorable characteristics," as claimed by our contemporaries, the stock drops. Possibly a part of this influence may be attributed to the general depression. Belmont (a Nevada mine) is fluctuating in San Francisco between 50c. and $1.10 per share. This company made a shipment of about $4000 on the 18th ult., and anticipates following it up regularly. Best and Belcher is an exception to the tendency, opening at $2 advance on the price of a week ago.

The *Commercial Herald* of the 27th ult. says of the market: "This has been a 'crushing' week in the mining share market, the fluctuations having been violent, and the fall in the principal stocks has kept pace with the numerous assays of ores and final compromises made. Innumerable theories have been advanced as to the true position of affairs, and while the knowing ones would freely parade the fact that there was no occasion for alarm, prices moved all the more readily to a lower point. Each blast in the lower levels of the Sierra Nevada sent forth a sharp pulsation—now barren, then rich rock—bunches of porphyry and bunches of the richest ore, and down goes the stock. Later on, the ore has again been reached. Is it possible that the outside stock speculating world adheres to these reports as a criterion for investment? They have been discounted again and again before the public get any benefit from them, and then the chances are in most instances against them. We hope the exceedingly panicky condition of the market will change for the better, and that something substantial may be reached in ore developments. As it is, the hurt the past week has been quite extensive, and a continuance, we fear, will produce a dull market for some time to come. Every thing seems to hinge on the discovery of ore in the Sierra Nevada, the manipulations of this stock in the market attracting the attention of all dealers—for as this stock goes so goes the whole 'caboodle.' California and Con. Virginia are out of the ring as large producing mines, and selling at low prices, as will be seen by reference to our table. Work in general is being vigorously prosecuted in every direction."

NEW INCORPORATIONS.

We note the recent organization of the following companies, in addition to those announced in our issue of November 2d:

Adalante Blue Gravel Mining Co.,	California	$200,000
Butte Hydraulic Mining Co.	"	23,000
Cabinet Consolidated Mining Co.	"	10,000,000
Central Gold Mining Co.	"	2,500,000
Happy Blue Gravel Mining Co.	"	300,000
Hercules Mining Co.	"	6,000,000
Iron Clad Con. Mill and Mining Co.	"	10,000,000
Kenton Mining Co.	"	5,000,000
Lake View Mining Co.	"	10,000,000
Lord Beaconsfield Mining Co.	"	6,000,000
Mary Cons. Mining Co.	"	5,000,000
Niagara Cons. G. and Sil. Mg. Co.	"	5,000,000
North Noonday Mining Co.	"	6,000,000
North Sigourney Con. Mining Co.	"	10,000,000
Oakland Con. G. and S. Mining Co.	"	6,000,000
Princetown Mariposa Mining Co.	"	15,000,000
Rose Quartz Gold Mining Co.	"	50,000
Santiago Gold Mining Co.	"	350,000
Shawmut Gold Quartz Mining Co.	"	.....
Silver Hill Tunnel and Mining Co.	"	10,000,000
South Belvidere G. and S. Mg. Co.	"	10,000,000
United Quartz Mining Co.	"	500,000
Adriatic Mining Co.	Nevada	10,000,000
American Mining Co.	"	10,000,000
Harrison Mining Co.	"	12,000,000
Liberty Mining Co.	"	10,000,000
South Lady Byron Mining Co.	"	10,000,000
Wales Con. G. and S. Mining Co.	"	10,000,000
Apache Mining Co.	Arizona	6,000,000
Arizona Con. Mining Co.	"	10,000,000
Franklin Mining Co.	"	10,000,000
Gray's Peak Mill and Mining Co.	"	10,000,000
May Bean Mining Co.	"	10,000,000
Ophir Mining Co.	"	10,000,000
Uncle Sam Mining Co.	"	10,000,000
Western Mining Co.	"	10,000,000
Heart Basin Mining Co.	Wyoming	15,000,000
Mineral Belt Tunnel and Mining Co.	Dakota	1,000,000

ASSESSMENTS, with dates when delinquent: McMillan, 25c., January 2d; Buckeye, 50c., December 27th; Magalia, 10c., December 27th; Challenge, 20c., December 23d; Champion, 25c., December 27th; Lodi, 25c., December 23d; Endowment, 25c., December 30th; North Consolidated Virginia, $1, December 27th; Merrimac Copper Mining Co., 10c.; Wall Street Quicksilver, 10c.

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DIVIDENDS.

OFFICE OF THE ONTARIO SILVER MINING CO., 31 Broad street, New York, December 5, 1878.

DIVIDEND NO. 38.

The regular monthly dividend of FIFTY CENTS per share has been declared for November, payable at the office of the Transfer Agents. WELLS, FARGO & CO., No. 65 Broadway, on the 16th inst. Transfer Books close on the 10th. H. B. PARSONS, Assistant Secretary.

OFFICE OF THE PLUMAS NATIONAL QUARTZ MINING CO., 77 Cedar street, New York, December 3, 1878.—The Dividend for the month of November, 1878, of ten (10) cents per share upon the capital stock of the Plumas N. Q. M. Co. has this day been declared, payable in gold coin, on and after the 17th inst., at the office of the Transfer Secretary, No. 77 Cedar street, Room No. 15.

Transfer books will close on the 9th and re-open on the 18th inst. By order of the Board,
IVAN PROWATTAIN, Secretary.

NEW YORK, DECEMBER 2, 1878.—OFFICE of Hukill Gold and Silver Mining Co.—The twenty-first regular monthly dividend of ONE PER CENT will be paid at the office of the Hukill Gold and Silver Mining Company, 17 Broad street, on and after the 10th inst.

Transfer Books will close on the 7th and re-open on the 16th inst. S. V. WHITE, Treasurer.

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Philadelphia & Reading Coal & Iron Co. ix
Swords, A. S., New York ix
Whitney, McCreary & Kemmerer, N. Y. ix

Coal and Ore Separators:
Fraser, Chalmers & Co., Chicago, Ill. vi

Creosoted Wood:
Andrews, Ed. R., Boston and New York v

Dealers in Mining Properties:
Ashton & Doyle, New York vi

Dividends:
Hukill Gold & Silver Mining Co., N. Y. 414
Ontario Silver Mining Co., New York 414
Plumas National Quartz Mining Co., N. Y 414

Educational:
Caruthers, James, New York —

Electro-Metallurgist:
Keith, N. S., New York vi

Emery Wheels:
New York Belting and Packing Co., N. Y. v

Engineers and Chemists:
Bradt, W. H., Leadville, Colo. vii
Bates, Henry D., Leadville, Colo. vii
Castner, H. Y., New York vii
Courtis, Wm. M., Wyandotte, Mich. vii
Hill, John W., Cincinnati, Ohio vii
Keyes, W. S., San Francisco, Cal. vii
Randolph, John C., New York vii
Rothwell, Richard P., New York vii
Rolker, Chas. M., Reno, Nevada vii
Smith, Graham, London, Eng vi
Smith, J. Alden, Boulder, Colo. i
Stearns, Irving A., Wilkes-Barre, Pa. vii
Sweet, E. T., Silverton, Col. vi
Wulsten, Carl, Rosita, Col. vii
Wilson Bros. & Co., Philadelphia vii

Engineers' Instruments:
Heller & Brightly, Philadelphia vi
Keuffel & Esser, New York iv

Financial:
Baxter & Co., New York 414

Fire Brick:
Maurer, Henry, New York ii
Ernst, Otto, South Amboy, N. J. ii

Gas Process:
American Gas Fuel and Light Co., N. Y. iv

Heating and Ventilating:
Open Stove Ventilating Co., New York ii

Hoisting Machinery:
Crane Bros. Mfg. Co., Chicago, Ill. v
Copeland & Bacon, New York x
Grimth & Wedge, Zanesville, O. iii

Hotels:
International Hotel, Georgetown, Colo. v

Hydraulic Jacks and Punches:
Dudgeon, Richard, New York v

Lamps:
Hinrichs, C. F. A., New York —

Machinery:
Pratt and Whitney Co., Hartford, Conn. ii

Metal Brokers:
White, Edward P., New York iv

Mineral Wool:
Elbers, Alexander D., New York v

Mining Bureau:
Bixby, H. G., New York vi

Mining Companies:
Flat Fluming Co., Helena, Col. 414
Plumas, G. & S., Mining Co., New York vi

Mining, Crushing, Stamping and Smelting Machinery:
Aitchison, R. & Co., Chicago, Ill. v
Blake's Stone Breaker, New Haven, Conn. vi
Copeland & Bacon, New York x
Davis, John, & Co., Chicago, Ill. i
Fraser, Chalmers & Co., Chicago, Ill. vi
Foster-Firmin G. & S. Amalgamating Co., Norristown, Pa. v
Gates & Scoville Iron Works, Chicago, Ill. vi
Morey & Sperry, New York vi

Ores:
Antimony Ore or Regulus Wanted, N. Y. vi
Platinum Ore Wanted, New York vi

Patents:
Lehman, F. A., Washington, D. C. x
Stetson, Thomas D., New York v

Pumps:
Cameron, A. S., New York iii
Clayton, James, Brooklyn iii
Crane Brothers Manufac'g Co., Chicago iii
Deane Steam Pump Works, New York —
Hardick, Chas. B., Brooklyn, N. Y. iii
Knowles Steam Pump Works, New York i
Worthington, H. R., New York iii

Railway Train Brakes:
Prosser, Thos., & Co., New York vi

Railroads and Transportation:
Colorado Central R.R. viii
Denver & Rio Grande R.R. vii
Missouri, Kansas & Texas R.R. iii
New York & Philadelphia New Line vii
Pennsylvania R.R. v

Rock Drills:
Am. Diamond Rock Boring Co., N. Y. x
Burleigh Rock Drill Co., Fitchburg, Mass. x
Ingersoll Rock Drill Co., New York x
Penn. Diamond Drill Co., Pottsville, Pa. x
Rand Drill Co., New York x

Roofing:
Porter Iron Roofing Co., Cincinnati, Ohio ii

Safes and Scales:
Marvin Safe & Scale Co., New York i

Smelting and Refining Works:
Robertson, J. B., New York v
Stetefeldt Furnace Co., San Francisco, Cal. i
Foster-Firmin G. & S. Amalgamating Co., Norristown, Pa. v

Steam-Engines:
Todd, Joseph C., New York ii
Fraser, Chalmers & Co., Chicago Ill. vi

Steel Works:
Crescent Steel Works, Pittsburg, Pa. iv
Park, Bro., & Co., Pittsburg, Pa. iv

Timber Lands:
Rickets, R. Bruce, Wilkes-Barre, Pa. viii

Tracing Paper:
Trowbridge, F., Milford, Conn v

Tubes and Pipes:
Worthington, H. R., New York iii
Abendroth & Root Mfg. Co., New York x

Valves:
Mohawk and Hudson Manufacturing Co., Waterford, N. Y. iii

Water Wheels:
Alcott's, Mount Holly, N. J. i
Leffell, James, & Co., Springfield, O. iv

Well Drilling:
Pierce Well Excavating Co., Philadelphia iv

Wire Rope:
Channon, H., & Co., Chicago, Ill i
Copeland & Bacon, New York x
Hazard Mfg. Co., Wilkes-Barre, Pa. ii
Mason, John W. & Co., New York i
Roebling's, J. A., Sons Co., Trenton, N. J. iv

Writing and Drawing Materials:
Keuffel & Esser, New York iv

Miscellaneous:
Situation Wanted by a Mining Engineer. i